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69 alberta department of agriculture Annual Report

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Report of the Department of Agriculture - 1969

The Honorable H. A. RUSTE,

Minister of Agriculture.

I have the honor to submit the annual report of the Department of Agriculture for the calendar year of 1969.

Again, weather and marketing conditions adversely affected the agricultural industry and the total economy of the province. However, estimates of gross farm income showed a reduction of approximately only 7% from 1968. This was considerably less than some other areas in Canada and was due mainly to the diversification of crops and a large livestock industry in Alberta.

Based on information as to international, national and provincial production and market situation and possibilities, adjustments appeared necessary. The department undertook, through "Direction 70", to bring this information to producers, farm organizations, agri-business and others. The department accepted the responsibility of becoming more market-oriented and to work in co-operation with all others in the industry in the interests of long-term stability and economic strength.

Nineteen hundred and sixty-nine closed a decade of rapid change in the agricultural industry which included many changes in department policies, programs and services. One can foresee continuance of this and a possible acceleration of these changes into the 1970-1980 period.

A summary of the activities of the seven department divisions is presented in the following pages. Progress in all fields is noted.

May I, on behalf of the total staff, express my sincere appreciation to you for the guidance and wise counsel in administering department affairs.

Respectfully submitted,

E. E. Ballantyne, D.V.M., P.Ag., F.R.S.H.

DEPARTMENT OF AGRICULTURE PUBLICATION

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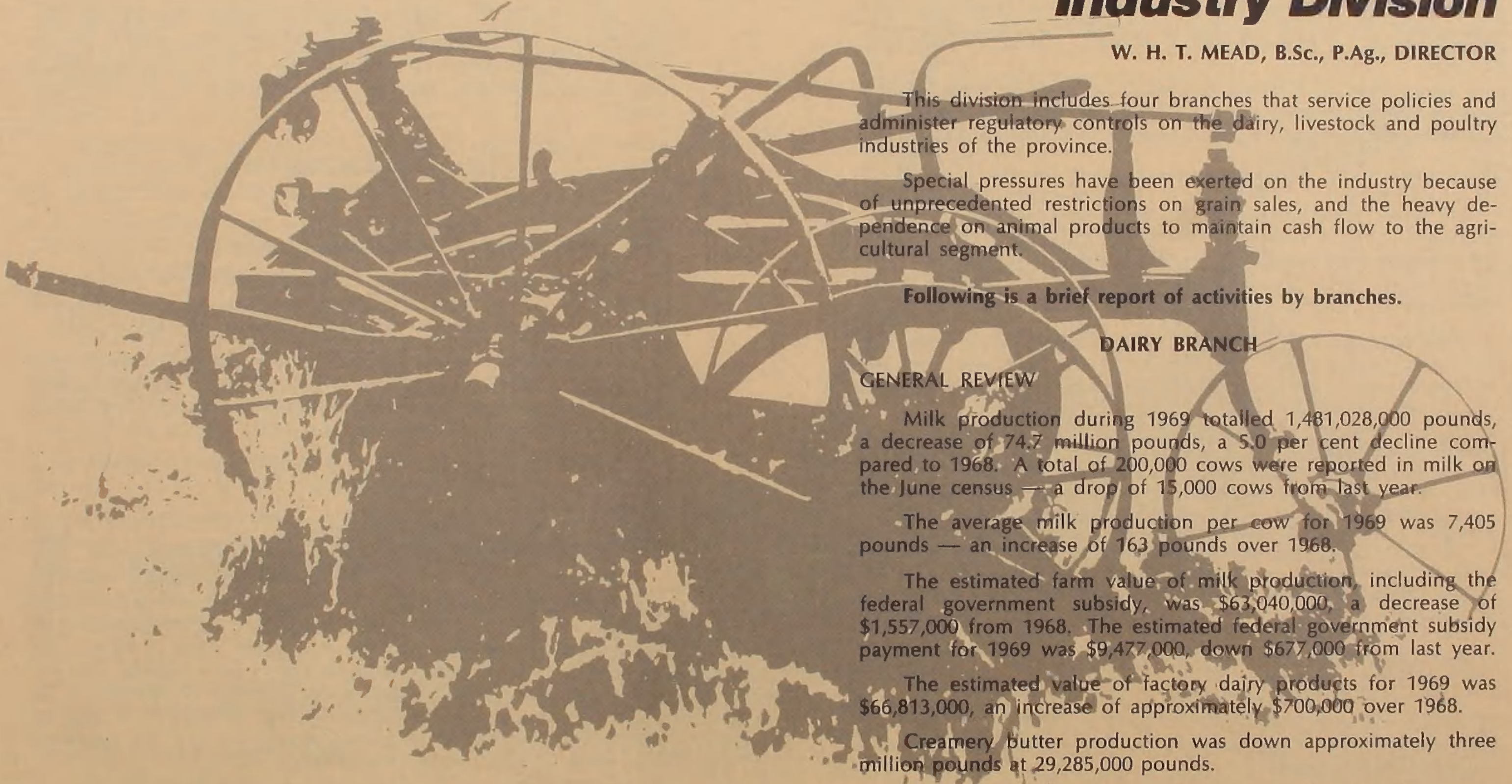
PROVINCE OF ALBERTA

H. A. RUSTE, MINISTER
E. E. BALLANTYNE, DEPUTY MINISTER

Report of the Animal Industry Division

W. H. T. MEAD, B.Sc., P.Ag., DIRECTOR



This division includes four branches that service policies and administer regulatory controls on the dairy, livestock and poultry industries of the province.

Special pressures have been exerted on the industry because of unprecedented restrictions on grain sales, and the heavy dependence on animal products to maintain cash flow to the agricultural segment.

Following is a brief report of activities by branches.

DAIRY BRANCH

GENERAL REVIEW

Milk production during 1969 totalled 1,481,028,000 pounds, a decrease of 74.7 million pounds, a 5.0 per cent decline compared to 1968. A total of 200,000 cows were reported in milk on the June census — a drop of 15,000 cows from last year.

The average milk production per cow for 1969 was 7,405 pounds — an increase of 163 pounds over 1968.

The estimated farm value of milk production, including the federal government subsidy, was $63,040,000, a decrease of $1,557,000 from 1968. The estimated federal government subsidy payment for 1969 was $9,477,000, down $677,000 from last year.

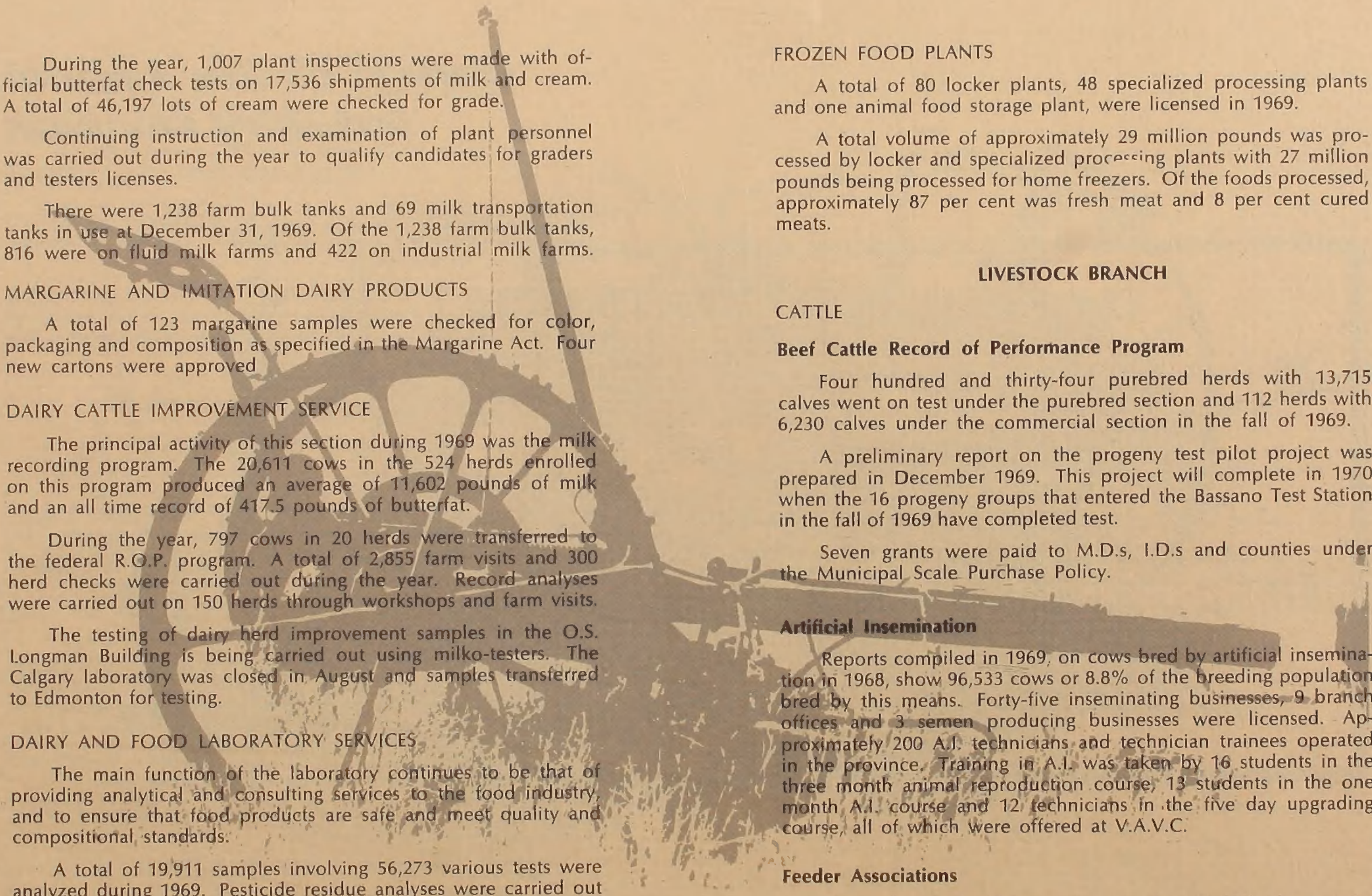
The estimated value of factory dairy products for 1969 was $66,813,000, an increase of approximately $700,000 over 1968.

Creamery butter production was down approximately three million pounds at 29,285,000 pounds.

Fluid milk sales were up almost ten million pounds.

DAIRY INSPECTION AND INSTRUCTION

A total of 103 dairy manufacturing plants were licensed in 1969.



During the year, 1,007 plant inspections were made with official butterfat check tests on 17,536 shipments of milk and cream. A total of 46,197 lots of cream were checked for grade.

Continuing instruction and examination of plant personnel was carried out during the year to qualify candidates for graders and testers licenses.

There were 1,238 farm bulk tanks and 69 milk transportation tanks in use at December 31, 1969. Of the 1,238 farm bulk tanks, 816 were on fluid milk farms and 422 on industrial milk farms.

MARGARINE AND IMITATION DAIRY PRODUCTS

A total of 123 margarine samples were checked for color, packaging and composition as specified in the Margarine Act. Four new cartons were approved

DAIRY CATTLE IMPROVEMENT SERVICE

The principal activity of this section during 1969 was the milk recording program. The 20,611 cows in the 524 herds enrolled on this program produced an average of 11,602 pounds of milk and an all time record of 417.5 pounds of butterfat.

During the year, 797 cows in 20 herds were transferred to the federal R.O.P. program. A total of 2,855 farm visits and 300 herd checks were carried out during the year. Record analyses were carried out on 150 herds through workshops and farm visits.

The testing of dairy herd improvement samples in the O.S. Longman Building is being carried out using milko-testers. The Calgary laboratory was closed in August and samples transferred to Edmonton for testing.

DAIRY AND FOOD LABORATORY SERVICES

The main function of the laboratory continues to be that of providing analytical and consulting services to the food industry, and to ensure that food products are safe and meet quality and compositional standards.

A total of 19,911 samples involving 56,273 various tests were analyzed during 1969. Pesticide residue analyses were carried out on 1,707 specimens. An increase from 90 samples of fish and wildlife in 1968 to 318 samples in 1969 resulted from the detection of mercury residue in pheasants and partridges.

FROZEN FOOD PLANTS

A total of 80 locker plants, 48 specialized processing plants and one animal food storage plant, were licensed in 1969.

A total volume of approximately 29 million pounds was processed by locker and specialized processing plants with 27 million pounds being processed for home freezers. Of the foods processed, approximately 87 per cent was fresh meat and 8 per cent cured meats.

LIVESTOCK BRANCH

CATTLE

Beef Cattle Record of Performance Program

Four hundred and thirty-four purebred herds with 13,715 calves went on test under the purebred section and 112 herds with 6,230 calves under the commercial section in the fall of 1969.

A preliminary report on the progeny test pilot project was prepared in December 1969. This project will complete in 1970 when the 16 progeny groups that entered the Bassano Test Station in the fall of 1969 have completed test.

Seven grants were paid to M.D.s, I.D.s and counties under the Municipal Scale Purchase Policy.

Artificial Insemination

Reports compiled in 1969, on cows bred by artificial insemination in 1968, show 96,533 cows or 8.8% of the breeding population bred by this means. Forty-five inseminating businesses, 9 branch offices and 3 semen producing businesses were licensed. Approximately 200 A.I. technicians and technician trainees operated in the province. Training in A.I. was taken by 16 students in the three month animal reproduction course, 13 students in the one month A.I. course and 12 technicians in the five day upgrading course, all of which were offered at V.A.V.C.

Feeder Associations

Twelve hundred and four active members in 33 feeder associations utilized a credit of $6,860,869.46 to feed out 46,738 cattle and 1,247 sheep during the 1968-69 feeding season.

Warble Control Area Assistance Policy

A warble control area assistance policy was introduced in 1969. It was designed to assist counties, M.D.s, I.D.s, special areas, and Indian reservations with administrative costs for a five year period where they undertake the operation of a control area. The County of Wetaskiwin #10 and the M.D. of Starland operated programs in 1969.

SWINE

The grading system based on "predicted yield of lean content", which was adopted December 30, 1968, proved to be well accepted by both producers and processors.

On October 31, the Alberta Hog Producers Marketing Board started selling all Alberta hogs by the "dutch system of bidding" over teletype telecommunication equipment.

Canadian R.O.P. for Swine Program

A total of 1,273 boars of 5 purebred and 5 crossbred lines were probed and weighed on the premises of 43 breeders under the boar performance home test. The average backfat probe was 0.79" and the average age was 176 days. Both figures are for adjusted 200 pound weight.

Under the sire progeny test, 40½ sire progeny groups completed test at the Lacombe and Edmonton test stations.

Swine Improvement Policies A, B and C

These policies terminated in 1969. The following table summarizes activity from inception to termination.

Year	Policy A Boars	Policy B Boars	Policy C Sows
1941-1954	2,468	—	—
1955-1969	2,188	4,784	1,230

SHEEP

Federal-Provincial Freight Assistance

Thirteen applicants submitted claims on the movement of 2,700 ewes and ewe lambs.

R.O.P. Sheep Program

Ten seed stock producers participated in the provincial record of performance program.

Farmers were supplied with 977 ewes and 21 rams under the livestock listing bureau.

FEED RECOMMENDATION SERVICE

Analysis was carried out on 2,588 feed samples involving 1,255 reports. In addition, 1,375 demonstration samples were analyzed.

ROYAL AGRICULTURAL WINTER FAIR EXHIBIT

The 1969 livestock exhibit was composed of 5 carloads of purebred beef cattle, 7 of market steers, one of dairy cattle and one of horses.

REGULATORY SERVICES

The Brand Act

The number of brands in good standing at December 31, 1969, were: cattle 37,934, horses 4,143, sheep 22, poultry 5 and fur bearing animals 1, making a total of 43,133.

Nine branding demonstrations were held and a pamphlet on brands and branding was published.

The Alberta Livestock and Livestock Products Act

Licences were issued to 315 stockyards, compared to 322 in 1968. A total of 56 Class D Stockyards (auction markets) were in operation during the year. Two yards changed ownership, one reopened and one new yard commenced operations.

The following table shows the number of livestock sold at Class D stockyards during the years 1965 to 1969.

	1965	1966	1967	1968	1969
Cattle and Calves	514,327	559,379	604,411	663,676	704,766
Hogs	364,807	331,715	463,783	473,071	419,481
Sheep	32,470	32,375	33,665	28,383	25,567
Horses	7,597	8,725	9,989	10,729	10,060

Claims were received against three livestock dealer's bonds.

Dealers and agents licensed totalled 876, compared to 867 for 1968. Eighteen charges for livestock dealer violations were laid.

The Stock Inspection Act

A total of 2,176,492 head of cattle and horses were inspected through markets and on export. This is down less than 1% from 1968 which was an all time high.

Brand Inspection Record of Live Cattle and Calf Shipments Out-of-Province

	1965	1966	1967	1968	1969
British Columbia	52,564	56,244	45,479	56,543	46,381
Saskatchewan	3,431	3,622	2,637	8,489	18,642
Manitoba	13,914	11,574	3,949	23,020	10,887
Ontario	89,618	117,460	86,182	155,542	152,399
Nova Scotia	—	50	42	—	—
Quebec	7,622	15,948	15,476	23,934	13,603
New Brunswick	204	50	16	95	16
United States	45,906	30,769	3,504	25,148	15,749
Newfoundland	—	—	—	—	—
Prince Edward Island	—	33	151	—	—
Total	213,259	235,750	157,436	292,771	257,677

Inspectors held up proceeds of sales or actual animals for a total of 6,770 head for investigation of rightful ownership. The proceeds of sales covering 163 head were forwarded to brand headquarters for further investigation. Of the total held, 79 head of live cattle and the proceeds from the sale of 570 head were returned to the rightful owner other than the shipper, with 16 head still under investigation at December 31.

Two hundred and six butchers and hide dealer's licenses were issued, a decrease of 8 from 1968.

The Horned Cattle Purchases Act

The following table shows the percentage of cattle with horns at the main market centres for the past four years with a base point of 1949.

	1949	1966	1967	1968	1969
Edmonton	19.9	14.5	14.0	13.7	15.3
Calgary	15.6	7.9	7.1	6.8	7.1
Lethbridge	—	7.3	7.5	7.6	7.3
Medicine Hat	—	3.8	3.7	3.9	4.3

The following policies and services were terminated as of July 1, 1969:

Dairy Heifer Calf Policy
Swine Improvement Policies A, B and C
Sheep Improvement Policies A and B
Livestock Shipping Depot

POULTRY BRANCH

Commercial egg production in Alberta totalled 40,375,000 dozen, up 3% from the 39,189,000 dozen produced in 1968. However, this production was short of Alberta requirements. It is estimated that an average of 6,000 dozen per week were imported from outside sources during the year. This shortage was created by low egg prices during the preceding year discouraging production.

Producer prices for grade A large during 1969 ranged from 37 cents to 52 cents per dozen. The average weighted price for all grades was 37.1 cents, compared to 29.3 cents in 1968. No deficiency payment was paid for the support year ending September 30.

The Alberta Egg and Fowl Marketing Board became operative in 1969, establishing marketing quotas and grower prices. Increased quotas were issued to existing and new growers to cover the estimated 6,000 dozen per week deficiency.

Chicken broiler sales were up 15% from last year. Alberta production was 29,000,000 lbs., 6½% short of requirements. Additional quotas totalling 207,000 sq. ft were issued during the year to existing and new growers by the Alberta Broiler Growers' Marketing Board.

Live weight prices to producers were in the 22 to 23 cent range for the first 9 months of the year, dropping to 20 cents by the end of the year. The weakening of the price structure was due to excessive production in Quebec with subsequent offerings into this province.

Turkey production in 1969 totalled 14,250,000 lbs., a decrease of 18% from 1968. This decrease was the result of growers placing 11% under quota, heavy growing mortality and marketings at lighter weights. Prices to growers were comparable to slightly firmer compared to 1968.

The nutrition-density study commenced at the Provincial Poultry Plant, Oliver, was completed in late 1969 and a report is currently being prepared for publication. A protein phase feeding study was initiated in 1969, scheduled for completion in 1971. The fifth random sample broiler feed test was completed during the year and the results published to the feed industry. In co-operation with the Veterinary Services Division, a flock of avian-encephalomyelitis-free birds was established at the plant for testing and research purposes.

Report of the Agricultural Economics Division

J. PANKRATZ, DIRECTOR

The role of the Economics Division continued in three areas of major concern: (1) providing a continuing education service, as an integral part of other departmental programs, with the basic objective of assisting farmers to help themselves attain their individual and family goals; (2) to advise and counsel government officials on the economic implications of various existing and proposed policies and programs; and (3) collection, analysis and dissemination of research information and agricultural statistics necessary to a more thorough understanding of agricultural trends, outlook, adjustments and social and economic development.

J. Pankratz became Director of the Economics Division on June 1. K. Elgaard, the Assistant Director, was Acting Director from September 1, 1968 to end of May, 1969. A. R. Jones was designated Economist on Special Assignments (marketing) and directly responsible to the Director.

Reorganization of the Economics Division is in process and is oriented to the expansion of educational services in farm business management and to the expansion of research, outlook and other work in marketing in accordance with major departmental objectives. The Systems Design and Data Analysis Branch and the Resource Economics Branch have been formed. The Economics Division has continued to provide an administrative function to the Rural Development Research group which was seconded to H.R.D.A. a year ago.

A brief outline of the work of the five branches is presented below.

RESOURCE ECONOMICS BRANCH

The Resource Economics Branch was formed in midsummer by bringing together four professional positions (including one vacancy) and three supporting staff positions (including one vacancy), mostly from the former Production Economics Research Branch.

This branch will focus research attention on long range policy problems relating to natural resources development in Alberta. It will primarily serve the expanding needs of the Department of Agriculture in multiple purpose water and land development programs; will continue present arrangements to service the Department of Lands and Forests in development projects of crown lands; and will collaborate with Human Resources Development Authority, Department of Industry and Tourism, and other government departments and agencies in resource development programs and projects.

Present and the past year's major activities include an economic base study of the Sturgeon River Basin, a flood control study of Namepi and Kennedy Creeks, a comprehensive input-output study of the South Saskatchewan River Basin in Alberta, a water requirements study of the Coal Lake - Battle River Basin, a cost-benefit study of water level stabilization in Gull Lake, and appraisal of surface and cultivation lease rental rates for the Department of Lands and Forests.

FARM MANAGEMENT BRANCH

The primary objective of this branch is to develop the management resource of farm operators. Farmers will be provided efficient tools for decision making purposes, including accurate and adequate agricultural information, advanced economic and management principles and a sound analysis procedure.

Reorganization brought together four groups of agricultural specialists — farm business management specialists, production research economists, regional economists and record-keeping technicians — to form an expanded branch providing a co-ordinated approach to farm management.

The branch is divided into three sections:

1. The Farm Business Management Program Section which conducts the farm business management program, co-ordinates CANFARM services in Alberta and which is now developing a new farm business management program.
2. The Production Economics Research Section, responsible for designing new data collection, retrieval and analysis systems and carrying out these projects.
3. The Regional Farm Economists, who will in the future put greater emphasis on assisting district agriculturists and other professional staff and less individual farm contact.

SYSTEMS DESIGN AND DATA ANALYSIS BRANCH

The Systems Design and Data Analysis Branch was officially established in midsummer of 1969. The role of this branch is to supply the information system design and analysis requirements for the Alberta Department of Agriculture.

Services to be provided by this branch include:

1. Designing useful information reporting systems for economic and scientific applications of internal groups and of external groups serviced by the department.
2. Providing and maintaining computer programs for routine and unique information and report generation, as well as programs for real-time research and information retrieval.
3. Conducting staff education in the use of research and information retrieval facilities and in the use of statistical, mathematical and operations research techniques made practical by the use of the computer.
4. Providing information systems for the internal management of the department in the areas of forecasting, planning, budgeting, administration and communications.
5. Researching future information requirements of the department and providing for them in the light of changing technology.

To date the branch has been primarily involved in defining its areas of responsibility, establishing internal procedures and servicing departmental requests.

MARKETING AND STATISTICS BRANCH

On July 1, the former Marketing and Statistics Branches were amalgamated into one branch and functions reorganized to include more emphasis on the marketing phases.

Crop reports and crop press releases were each issued bi-weekly. Special surveys were made of the frost situation in June and feed supplies in the autumn. The crop reporting program is presently being evaluated.

The normal agricultural statistics dissemination was carried out in collaboration with D.B.S. Staff participated in two special surveys on forage and small seeds and cattle on feed which were conducted in Alberta.

The quarterly issues of the "Alberta Farm Economist" and two supplements were issued. Monthly marketing releases were initiated in which full discussions of relevant marketing factors are presented.

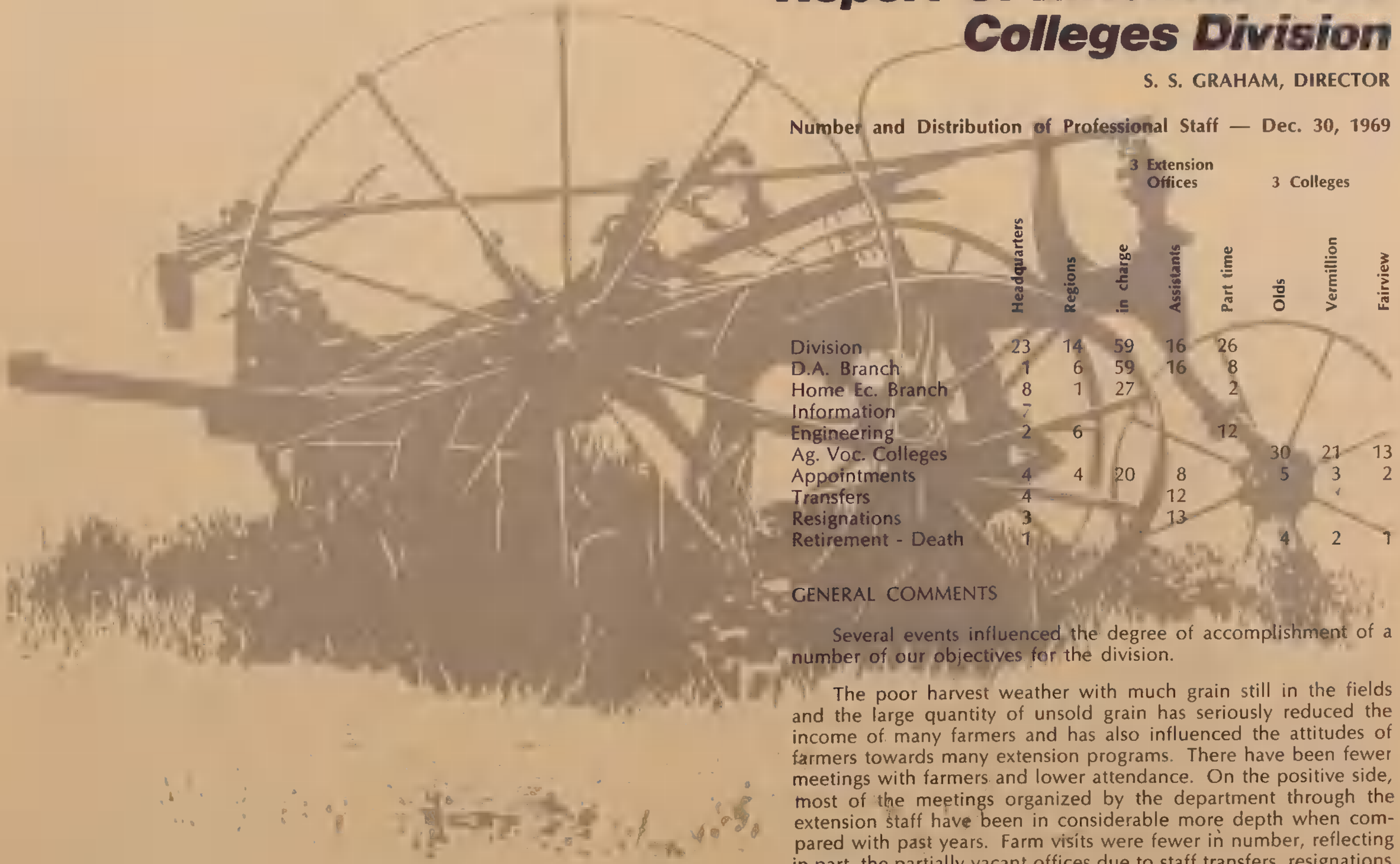
The marketing education function was developed with a number of presentations to farm groups at workshops for agricultural fieldmen and at conferences. The expansion of research and investigational activities in marketing is planned.

FARM PURCHASE BOARD

During the fiscal year April 1, 1968 to March 31, 1969 the board approved 103 applications for a total of $1,184,171.

Report of Extension and Colleges Division

S. S. GRAHAM, DIRECTOR



Number and Distribution of Professional Staff — Dec. 30, 1969

			3 Extension Offices			3 Colleges		
	Headquarters	**Regions**	**in charge**	**Assistants**	**Part time**	**Olds**	**Vermillion**	**Fairview**
Division	23	14	59	16	26			
D.A. Branch	1	6	59	16	8			
Home Ec. Branch	8	1	27		2			
Information	7							
Engineering	2	6			12			
Ag. Voc. Colleges						30	21	13
Appointments	4	4	20	8		5	3	2
Transfers	4			12				
Resignations	3			13				
Retirement - Death	1					4	2	1

GENERAL COMMENTS

Several events influenced the degree of accomplishment of a number of our objectives for the division.

The poor harvest weather with much grain still in the fields and the large quantity of unsold grain has seriously reduced the income of many farmers and has also influenced the attitudes of farmers towards many extension programs. There have been fewer meetings with farmers and lower attendance. On the positive side, most of the meetings organized by the department through the extension staff have been in considerable more depth when compared with past years. Farm visits were fewer in number, reflecting in part, the partially vacant offices due to staff transfers, resignations and staff training.

The extension branches have reaffirmed at least two major components of our program. This is the commitment by the department and the division to give farm business management a major emphasis with the district agriculturist as the direct link with the farmer, supported in depth by the Extension and Colleges Division and the Economics Division. This includes the use of the CANFARM program to help speed up farm accounting and analysis for the farmer. The second commitment was that of applying the principle of program planning to all phases of our extension efforts. Partial success was achieved.

DISTRICT AGRICULTURIST BRANCH

Summary of Activities in the District Agriculturist Branch

	Meetings, Lectures, etc.		Interviews Phone Calls		Farm Calls	
	1968	**1969**	**1968**	**1969**	**1968**	**1969**
Plant Industry	997	841	50677	44185	7954	6494
Animal Industry	501	589	19385	22116	3092	3432
Farm Economics	425	450	13898	12860	2241	1665
Ag. Engineering	236	236	11185	11497	2154	2197
Miscellaneous	793	820	12998	13072	1277	1533
Total Above	2952	2936	119963	109702	16720	15321
Total Attendance					226264	196926

Mass Communication Media

	1969	1968
Releases	1021	958
Newspaper participating	127	84
Newsletters written	232	549
Radio talks and releases	956	376
T.V. presentation	145	123

General Comments

Nineteen sixty-nine provided the opportunity to regain field staff losses incurred during the first three years of the regionalization program. More assistant district agriculturists were taken on during the year than any year on record, when sixteen were engaged. While this new staff will soon be able to assume a full work load, during the first few months of employment the training activities tend to reduce the output of the office to which they are assigned. This could be a partial explanation for the decrease in total reported activities. These consisted of a decrease of 11% in farm calls, and a decrease of 8% in office calls.

Total meetings, however, increased by over 5%, but attendance at these dropped by 13%. Components of these changes showed a drop in most activities related to field crops, while there was a significant increase in virtually all livestock projects. Farm management showed little change from 1968, while there was a small general decrease in agricultural engineering engagements reported. Work related to program planning and advisory committees showed an upward tendency, especially in the area of individual contacts.

One of the most significant innovations during 1969 was the program planning work carried out in the autumn. District needs were summarized regionally and the regional requests were outlined at a provincial conference on October 21. The results of this program integration was, and will be, used in developing departmental programs and setting provincial priorities by the divisions. This opportunity for involvement in programming was welcomed by all district and regional staff, and added meaning to the theory of program planning.

Training in 1969 consisted of a one week farm management course for all district agriculturists. Trainer staff attended a two day course on staff training. New staff attended a five day orientation and induction course.

Plant Industry - More interested in tree planting and horticulture meetings. Drastic drop in use of fertilizer and weed spraying.

Livestock - Widespread interest in livestock. Beef herds on R.O.P. nearly doubled. Increased use of A.I. Warble fly control program gaining acceptance.

4-H - Involvement in 4-H continued to decline. Only 4% of office calls and 2% of farm calls concerned with 4-H.

Agricultural Economics - The need for marketing information widely expressed. Some disenchantment with reference to efficiency of production because of growing grain surplus. Farm management programs being followed by many leading farmers.

Agricultural Engineering - Improvement and remodelling of farm buildings required major attention because of shortage of cash and high credit rates. Hog buildings received most attention. Next in priority were feed lot construction and sewer and water installation.

Advisory Groups - A steady increase in advisory groups recorded in 1969.

Mass Communication - A substantial increase was recorded in the use of all forms of mass communication media.

HOME ECONOMICS BRANCH

Summary of Major Activities

	Persons Assisted (Phone, Ltrs. Interviews)		Home Visits		Lectures, Meetings Field Days, Workshops, Demonstrations, Short Courses	
	1968	**1969**	**1968**	**1969**	**1968**	**1969**
Home Management	4014	3812	142	130	334	274
Family Living	1284	1372	—	25	249	236
Food, Nutrition	7502	5334	112	192	199	235
Home Design	2983	3473	937	713	175	113
Clothing, Textiles, Handicrafts	4537	4671	234	90	928	1041
Other: youth, public relations, organ. conferences, advisory comm's., programming horticulture, etc.	27699	28291	572	845	1785	1933
Totals	48019	46953	1997	1995	3670	3832

More emphasis was given to in-depth programs. An interdisciplinary approach to program development and implementation was applied more widely. There was increased demand for consumer information and money management. The growing interest in the family living series made it impossible to meet the demand.

Research revealed that the nutritional status of North Americans has declined. New food and nutrition extension programs to improve eating habits have had excellent public response.

T.V. program time increased; more staff were involved; special taped programs were developed for educational T.V.

The Home Economics laboratory has already created extensive public interest. It has proved valuable for testing and evaluating consumer products; developing uses for and promotion of agricultural products; and as a practical demonstration of applied design principles in home planning, furnishings and equipment.

Progress was made in adapting and carrying out special programs for low income families and native women. The Department of Indian Affairs has given financial support for work on reserves. The Human Resources Development Authority has seconded staff to this branch.

The first city home economist was appointed for Edmonton.

A number of home economics staff are taking courses for professional advancement.

INFORMATION BRANCH

PRESS SECTION

Farm Notes

251 timely articles about agriculture and the rural community to 2,650 outlets.

Science and The Land

46 reports on agricultural research to 2,650 outlets.

News Releases

60 releases on appointments and progress to press, radio and television.

Agricultural Weather Forecast

110 forecasts — May to October — released to 36 radio and TV outlets.

Other

Several feature stories to widely circulated farm publications, special reports from Royal Agricultural Winter Fair and publicity of special department events.

RADIO-TV SECTION

Television

35 program inserts for 1970 on MEETA. Two feature films for use at short courses. Film script and graphic for nine one-hour instructional programs on Canfarm accounting system. Careers in Agriculture TV program produced with CBC and Department of Education. TV news clips, film and slide kits, etc. A three-day TV training course for extension staff. Portable VTR used to record special presentations for further use.

Radio

261 "Call of the Land" programs carried daily, weekdays by 11 stations.

Products Promotion

Rapeseed oil promotion, "Beef is Beautiful", "Gourmet Meat Festival", Food fair, Northgate Mall, Edmonton; National honey month, Southern Alberta Poultry Show. 321 daily radio programs on CBC, 229 daily programs to 11 other stations. 20 programs on consumer segment of "Marketplace" on CFRN-TV. 19 TV programs for various stations, 12 press releases and 1 publication.

Artist

TV graphics, assistance with displays, all creative and graphic work for the Department of Agriculture.

GENERAL COMMENTS

The information Branch continued its effort to assist the agricultural industry through mass media programs.

The "Call of the Land" radio program attracted over 90 thousand listeners a week on 7 of the 11 stations that subscribe to Bureau of Broadcast Measurements. On July 28, 1969 a milestone was reached with the broadcasting of the 5,000th "Call of the Land" program.

Another significant development during 1969 was the acceptance by the Department of Agriculture of an invitation from the Metropolitan Edmonton Educational Television Association (MEETA) to start production on agricultural programs for release on that station when it starts to broadcast in 1970.

The promotion of Alberta agricultural products was given high priority. A rapeseed oil promotion was developed by the Product Promotion Officer and financed by the Rapeseed Association of Canada.

PUBLICATIONS AND VISUAL AIDS

Agricultural & Homemaking publications distributed	370,891
Building Plans distributed - - - - - - - - - -	12,027
Duplicating and printing service for the Department (increased 300% in 1969)	4,298,000

Mailing Centre — provided for major department requirements.
Visual Aids Equipment — Maintained and distributed for department requirements.

AGRICULTURAL ENGINEERING BRANCH

Summary of Activities

	No.	Attendance
*Welding Schools	30	580
*Tractor Maintenance	11	221
School, Short Courses on Buildings, Machinery, Plumbing	66	2,526
Demonstrations and Field Days	31	2,439
Group Meetings	249	
Radio and T.V. Participation	51	
Bulletins and plans produced	205	
Farm Calls	1,106	

*Vocational Type schools which provide 30 to 40 hours of instruction per student.

GENERAL COMMENTS

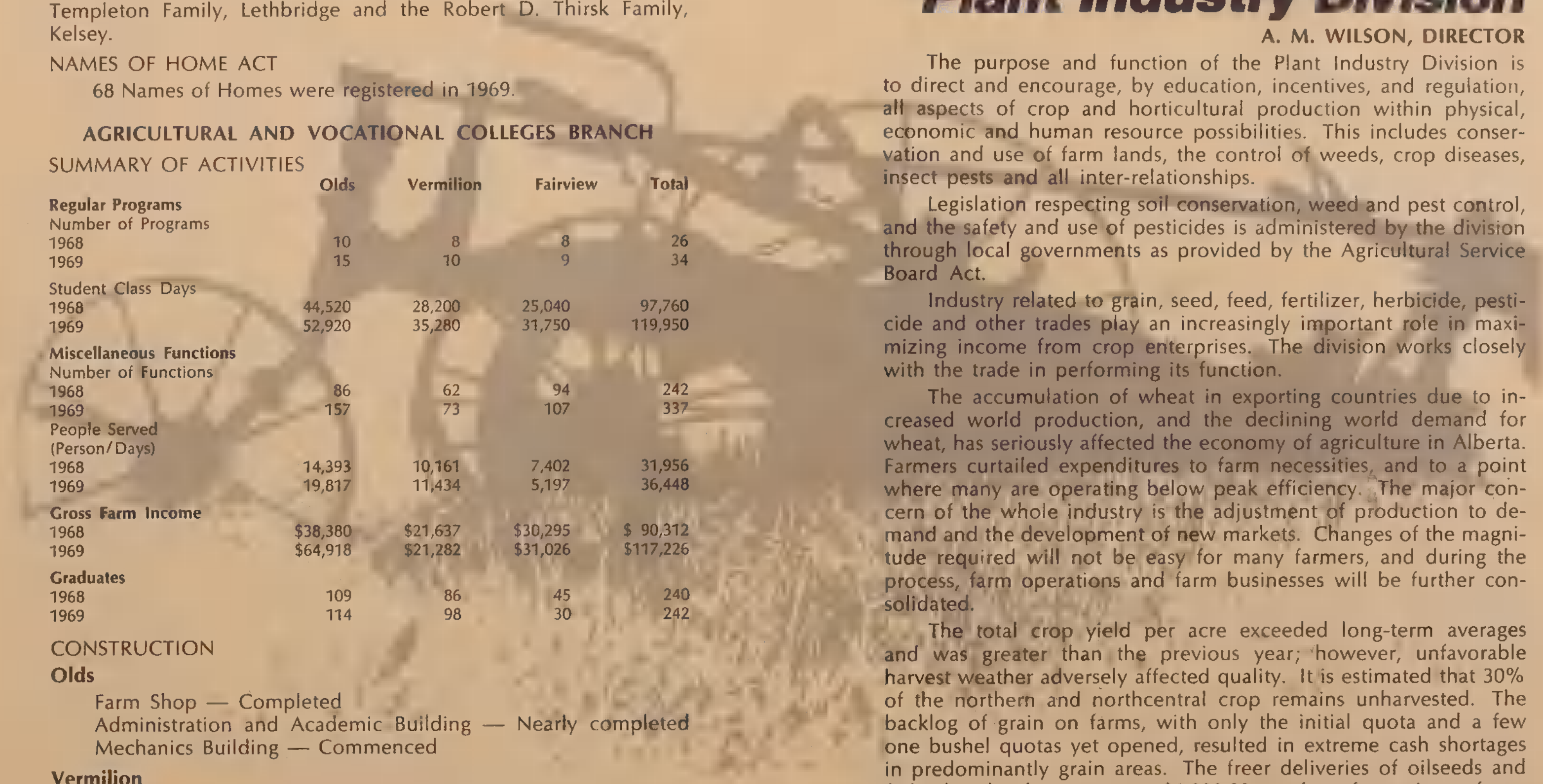
A marked increase in activities of the personnel of this branch was recorded with a 22% increase in farm calls and increases in individual plan production, evening welding schools and group meetings. More specific and detailed information was requested. The engineers engaged in applied research in animal waste disposal, vegetable storage, environmental control, snow control, grain drying, seed cleaning and treatment and preventing grain losses in transportation. Seventy-five per cent of the farm and office calls were related to livestock buildings and farmstead mechanization.

LEADERSHIP TRAINING

Change in personnel of the leadership development office during the year resulted in some curtailment of activities. However, programs and activities with voluntary organizations, the University and government agencies were carried out in each of the major areas of responsibility. The subject matter dealt with both in staff training and district leadership courses included program planning, leadership skills, communication skills.

The percentage of time spent in each area of responsibility is given in the following table based on first five months activities:

Teaching or Resourcing	29%	Consulting - - - -	17%
Initiating - - - - -	3%	Coordinating - - - -	10%
Planning - - - - -	20%	Administration - - -	21%



MASTER FARM FAMILY AWARDS

Master Farm Family Award winners were the Cecil Peacock Family, Alliance; the Don Merrill Family, Hillspring; the George Templeton Family, Lethbridge and the Robert D. Thirsk Family, Kelsey.

NAMES OF HOME ACT

68 Names of Homes were registered in 1969.

AGRICULTURAL AND VOCATIONAL COLLEGES BRANCH

SUMMARY OF ACTIVITIES

	Olds	Vermilion	Fairview	Total
Regular Programs				
Number of Programs				
1968	10	8	8	26
1969	15	10	9	34
Student Class Days				
1968	44,520	28,200	25,040	97,760
1969	52,920	35,280	31,750	119,950
Miscellaneous Functions				
Number of Functions				
1968	86	62	94	242
1969	157	73	107	337
People Served (Person/Days)				
1968	14,393	10,161	7,402	31,956
1969	19,817	11,434	5,197	36,448
Gross Farm Income				
1968	$38,380	$21,637	$30,295	$ 90,312
1969	$64,918	$21,282	$31,026	$117,226
Graduates				
1968	109	86	45	240
1969	114	98	30	242

CONSTRUCTION

Olds

Farm Shop — Completed
Administration and Academic Building — Nearly completed
Mechanics Building — Commenced

Vermilion

Silo and Beef Holding Area — Completed
Hog Studies Building — Nearly completed
Metals Building — Commenced

Fairview

Campus Roads — Main roads completed

Report of the Plant Industry Division

A. M. WILSON, DIRECTOR

The purpose and function of the Plant Industry Division is to direct and encourage, by education, incentives, and regulation, all aspects of crop and horticultural production within physical, economic and human resource possibilities. This includes conservation and use of farm lands, the control of weeds, crop diseases, insect pests and all inter-relationships.

Legislation respecting soil conservation, weed and pest control, and the safety and use of pesticides is administered by the division through local governments as provided by the Agricultural Service Board Act.

Industry related to grain, seed, feed, fertilizer, herbicide, pesticide and other trades play an increasingly important role in maximizing income from crop enterprises. The division works closely with the trade in performing its function.

The accumulation of wheat in exporting countries due to increased world production, and the declining world demand for wheat, has seriously affected the economy of agriculture in Alberta. Farmers curtailed expenditures to farm necessities, and to a point where many are operating below peak efficiency. The major concern of the whole industry is the adjustment of production to demand and the development of new markets. Changes of the magnitude required will not be easy for many farmers, and during the process, farm operations and farm businesses will be further consolidated.

The total crop yield per acre exceeded long-term averages and was greater than the previous year; however, unfavorable harvest weather adversely affected quality. It is estimated that 30% of the northern and northcentral crop remains unharvested. The backlog of grain on farms, with only the initial quota and a few one bushel quotas yet opened, resulted in extreme cash shortages in predominantly grain areas. The freer deliveries of oilseeds and federal cash advances up to $6,000.00 per farm for grain on farms have at least provided some cash to pay farm accounts. In northern Alberta, where particularly unfavorable harvest weather ruined many farm crops, government-guaranteed loans to a maximum of $1,000.00 were made available through lending institutions to farmers who had little if any cash income.

The optimistic attitudes towards farm crops, which prevailed until 1967, has completely reversed and farmers are now pondering the future of their enterprises.

FIELD CROPS BRANCH

The year will be remembered as one of grain surpluses, particularly wheat, not only in Alberta but in all exporting countries of the world. Farmers, by necessity, are examining all posibilities of adjusting production to meet any potential market. Notable too, were the severe frosts in mid-June when up to 12 degrees of frost was recorded in several parts of Alberta. More remarkable, however, was the recovery of the crop which eventually yielded well above the long-term average. Many farmers, depending on grain sales for income, faced one of the most acute cash shortages since the 1930's.

Acreages of pedigree cereal and forage seed production increased slightly from 1968. However, poor harvest conditions deteriorated much of the crop in the northern half of the province, resulting in less than adequate supplies of certain kinds of cereals. Distribution of Breeder and Foundation seed was again carried out by the branch.

Nonpedigreed forage seed production was about average. However, reduced production was experienced in brome, fescue and Russian wild ryegrass. Increases were recorded in legumes and crested wheatgrass.

The Cereal and Oilseed Advisory Committee and the Forage Advisory Committee held their annual meetings and details of their deliberations are contained in their respective reports to the Alberta Agricultural Co-ordinating Committee.

Improvement projects for cereal, oilseed and forages were continued as in 1968. Twenty-one licenses were issued to seed dealers.

AGRICULTURAL RELIEF ADVANCES ACT

Advances were provided to assist farmers with their spring seeding operations in Improvement Districts 16, 17, 18, 19, 20, 21, 22, and 23. Total advances amounted to $111,124.40.

Municipal seed plants cleaned a total of 16,940,047 bushels of seed, plus 1,608,857 bushels for dockage removal. Two new plants were built, located at Vilna and Manning.

Alberta won two World Championships at the Toronto Royal Winter Fair in 1969. Both were from the same exhibitor, Mr. Harold E. Hansen of Vulcan, with samples of Raja flax and Chinook wheat.

The use of leaf-cutter bees for alfalfa seed production continued to increase. A threefold increase in bee populations was experienced with alfalfa yields from 500 to 800 lb./acre.

Production of honey was good (19.2 million pounds) and quality high. Markets were somewhat sluggish. Preliminary discussions have been held with a view to establishing a honey commission to promote and assist in marketing.

Wintering of colonies in B.C. increased. Some queens were imported from New Zealand for the first time.

Mr. T. Quesnel, B.Sc., joined the staff in October as regional apiculture fieldman at Fairview.

HORTICULTURE BRANCH

A total of 4,212 Alberta farmers planted 2,067,000 trees and shrubs for farm shelterbelt and windbreak purposes. This is an increase of 10% over 1968. The trees were used for the following purposes:

Farmstead Shelterbelts	941,000
Field Shelterbelts	624,000
Roadside Hedge	293,000
Replacements	104,000
Miscellaneous Plantings	105,000

In addition to the above, 800 bundles each containing 50 fruit bearing shrubs were distributed. About 2,230 larger trees and shrubs were supplied to public institutions for landscape purposes.

The Arbor Day program required 25,470 seedling spruce to look after the requests from 6 city and town school boards.

Under the ARDA project #28021, $31,790.00 was expended for the support of the provincial shelterbelt program.

An inventory of trees at the Oliver Nursery at the end of 1969 included 9,832,400 for the Department of Lands and Forests, and 11,422,150 coniferous and deciduous transplants and seedlings for the Department of Agriculture. The total inventory was 22,600,500 trees.

Seed extraction resulted in 800 lbs. of spruce from 1,518 bushels of cones and 1,875 lbs. of pine seed from 10,026 bushels. The estimated value of all seed processed was $38,000.00.

The total value of seed in storage is:

Department of Lands and Forests - - - -	$152,602.00
Private Companies - - - - - - - - -	$ 58,602.00
Nursery Seed - - - - - - - - - - -	$ 3,528.00
TOTAL - - - - - - - - - - - -	$214,732.00

The new walk-in cooler was completed and the nursery now has storage for an additional 7 million trees. A start was made on the new packing shed. A new gas regulation station was built, one mile of new fence was erected and the greenhouses renovated. The old packing shed and greenhouse were demolished to make room for new buildings. Fifteen acres of land was levelled.

A permanent weather reporting station was established in co-operation with the Department of Lands and Forests. In addition, four rain gauges and an evaporation meter were operated for the Water Resources Division.

The nursery staff consisted of 5 permanent employees plus four full-time hourly men. Part-time help consisted of 22 employees, including patients from the Alberta Hospital. Inmates from Fort Saskatchewan and Belmont jails were used extensively throughout the growing season.

Two new tomato varieties developed at the Horticultural Station at Brooks were named and released to the trade. One named Brookpact is a compact fruit type suitable for machine harvest. The other, named Brookpack is a fresh market variety. Selections were accepted from the Brooks apple nursery for second test orchard planting.

The testing of covers for greenhouses has favored fibreglass. In comparison with 7 other covers the highest yields of tomatoes were grown in the fibreglass greenhouse. Storage studies on cabbage, carrots, celery and rutabagas were continued under controlled temperature and humidity conditions.

Capital improvements at Brooks included an extension to the irrigation system at the isolation station, placement of 1,500 feet of ceramic tile irrigation pipe, an extension to office space, and construction of a tree seed cleaning and drying structure.

The rewriting and editing of the bulletins, "Carrot Production in Alberta" and "Home Storage of Vegetables" was completed.

Mr. P. D Hargrave, Superintendent for the past 34 years, retired December 31 and Dr. A. Olson was appointed Superintendent. Three horticultural technician positions and two gardener positions were filled.

WEED CONTROL & MUNICIPAL-PLANT INDUSTRY PROGRAMS BRANCH

Adverse weather conditions and the farm cash shortage contributed to a sharp decrease in chemical weed control. Only 5.6 million acres of field crops were treated with selective herbicides, a 32% decrease from 1968. As a consequence the many weed seeds in crop land will adversely affect the succeeding crop.

Pesticides in general came under serious attack for possible adverse effects on our environment. Herbicides received little criticism until late in the year when reports from U.S. government circles suggested that 2,4,5-T might be banned because of its teratogenic properties. The Canada Weed Committee is of the opinion that as yet there is no scientific evidence to warrant such action in Canada. The registered use of the herbicide picloram (Tordon) was extended to spot treatment on cultivated land. Some 2,000 acres of persistent perennials were treated with this chemical.

Weed inspection and related services continue to be carried out by agricultural fieldmen in rural municipalities and by weed inspectors in urban centres. This inspection force was augmented by the appointment of Inspection Service Branch personnel of the Attorney General's Department as weed inspectors to enforce those sections of the Noxious Weeds Act dealing with movement of materials containing weed seeds on highways. There was an increased demand for weed control on Crown lands, particularly in those areas where land assembly and farm adjustment programs were instituted. Several weeds, particularly green foxtail, Stork's-bill and cleavers were reported to be increasing in severity in several areas.

Extension and training were important activities and included the following programs:

a) One hundred and fifty weed control demonstrations,
b) Four major publications on weed control,
c) An aerial spray operators course at Olds,
d) Information programs through radio and television,
e) Agricultural chemical schools and short courses.

This branch administered the Plant Industry sector of the Agricultural Service Board program (including 3 ARDA projects) with the 58 municipalities. The extent of the operations is indicated by the following expenditures:

1.	Municipal assistance for wages of fieldmen, demonstrations and publicity	$205,387.00
2.	Weed Control	202,737.33
3.	Soils	54,719.33
4.	Crop Protection and Pest Control	20,275.00
5.	Field Crops	160,419.32
6.	Horticulture	24,957.00
	TOTAL	$668,494.98

There were 118 stationary and portable seed cleaning plants rated and classified in the province with appropriate permits issued.

CROP PROTECTION AND PEST CONTROL BRANCH

There was increased activity under the new policy to establish warble control areas. Two municipalities operated programs to treat all cattle and four others operated pilot projects. Safer insecticides were further field tested in the blackfly research project in the Athabasca area.

The grasshopper infestation decreased further in southern Alberta. Of 4.7 (5.7)* million acres infested, only 7,000 (18,000) acres were sprayed with dimethoate. Aphids infested alfalfa in the South and about 7,000 acres were sprayed. The alfalfa looper damaged several thousand acres of rape at Claresholm and the south Peace. Grain beetles and mites caused considerable loss to stored grain. Forest tent caterpillar and spruce sawfly were the worst pests of trees.

Monitoring continued for pesticide residues in food but only a few cases in dairy and meat products needed further investigation. Considerable investigation was carried out on mercury residues in game birds. Hunting of two species was banned. Treated seed was suspected .

Despite considerable increase in Norway rats invading from the east, Alberta was basically kept rat-free for the eighteenth consecutive year. About 14 (9) tons of Warfarin bait were used on 3,500 farms to destroy an estimated 37,000 (20,000) rats along the east border.

Of 92 (51) definite infestations, 6 (0) remained to be cleaned up at the end of the year. Coyote control was reduced mainly to counter mouse and bush rabbit numbers. An estimated 6,565 (14,650) coyotes were killed by the use of 108 (247) 1080 baits and 15,000 (34,000) strychnine pellets.

Bacterial ringrot disease of potatoes declined from 12.9% infested farms in 1968 to 10.0% and from 10.9% infected acreage to 8.5% for the 240 (255) potato farms and 21,256 (18,622) acres inspected. Blackleg and rhizoctonia were the most prevalent potato diseases. Other economic plant diseases included root rots on wheat and barley; streak mosaic on winter wheat; scald on barley; bacterial blight on peas; fusarium root rot on beans, alfalfa and alsike; fire-blight on mountain ash; snowmoulds on lawns; stem eyespot on red fescue; and ascochyta blight on sweet clover.

The following table lists the numbers and types of specimens received by the Crop Clinic for diagnosis, identification and recommendations:

	Insects	Diseases	Plant Identification	Miscellaneous	Total
Cereals & Forage	30(32)	203(260)	—(6)	—	233(298)
Special Crops	5(2)	75(28)	—(11)	—	80(30)
Ornamentals	210(179)	503(542)	—(11)	—	713(732)
Shelterbelts	8(0)	53(76)	—(—)	—	61(76)
Vegetables	26(27)	156(163)	—(—)	—	182(190)
Fruits	16(25)	160(64)	—(19)	—	176(108)
Stored Products	27(22)	—(—)	—(—)	—	27(22)
Household	92(28)	—(—)	—(—)	—	92(28)
Public Health	21(—)	—(—)	—(—)	—	21(—)
Weeds	—(—)	—(—)	314(227)	—	314(227)
Miscellaneous	73(110)	8(—)	114(101)	12(22)	207(233)
TOTAL	508(425)	1158(1133)	428(364)	12(22)	2106(1944)

SOILS BRANCH

Soil conservation programs and legislation, soils extension and the soil and feed testing service were administered by this branch. Activities were normal except for an increase in activity related to soil contamination by agriculture and from nonagricultural sources. A number of field and laboratory investigations were conducted to determine source and remedial measures. Considerable time was devoted to providing advice through interbranch and interdepartmental committees.

Extension meetings continued with increased emphasis on economics of soil fertility practices. A publication, "Anhydrous Ammonia as a Fertilizer" was printed. A number of applied research projects, some in co-operation with the University of Alberta, were conducted to improve recommendations from soil tests. Fertilizer use decreased by 30% in 1969 compared to 1968 vs 309,228 tons in 1969 vs 442,886 tons in 1968. Surplus grain and market outlook was the main reason for the decrease.

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* Figures in brackets are for 1968 comparisons.

Soil losses from wind and water erosion were normal. Some water erosion damage occurred in local areas due to rapid spring run-off. Municipal soil conservation officers' activities were limited to farmer contacts and issuing permits for top-soil removal and stubble burning where such bylaws are in force. Soil conservation program expenditures by agricultural service boards were down at $90,000 in 1969 from $124,000 in 1968.

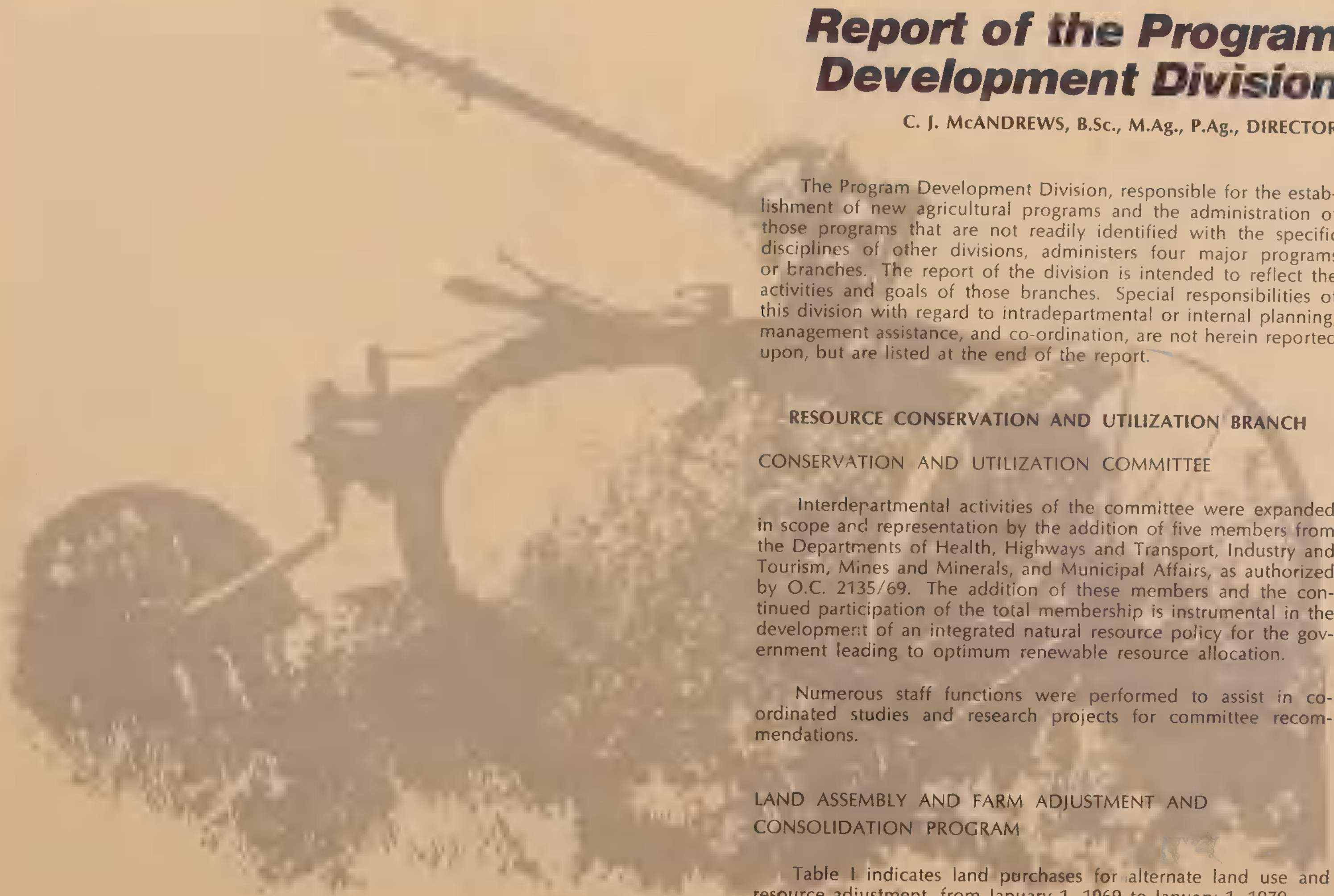
SOIL AND FEED TESTING LABORATORY

Soil tests were conducted on 10,241 samples from farmers, gardeners and greenhouse operators, a decrease from 15,448 samples analyzed in 1968. Poor fall weather and reduced grain sales account for this decrease. Animal feed sample analyses totalled 2,588 (1968 - 2,597 samples). A report on the feed recommendation service is found in the Animal Industry Division report.

Summaries of soil test data were prepared to provide improved cultural and fertilizer recommendations by extension and research workers. To identify the extent and location of plant nutrient deficiencies and other soil problems, a number of computer produced maps were prepared. Feed sample data from 1965 was transferred to computer cards and tape to provide summary analyses of feed materials.

A number of special analyses were developed to supplement routine tests for improved diagnosis and interpretation of soil, plant and animal feed problems. These include sulphur, aluminum and maganese in soil. A plant physiologist was employed to diagnose plant growth problems.

The laboratory analyzed an additional 5,073 soil and plant samples under a number of co-operative projects with the University of Alberta and Canada Department of Agriculture to improve soil testing methods. There were also 383 feed and 926 soil samples analyzed for department staff on special problems.



Report of the Program Development Division

C. J. McANDREWS, B.Sc., M.Ag., P.Ag., DIRECTOR

The Program Development Division, responsible for the establishment of new agricultural programs and the administration of those programs that are not readily identified with the specific disciplines of other divisions, administers four major programs or branches. The report of the division is intended to reflect the activities and goals of those branches. Special responsibilities of this division with regard to intradepartmental or internal planning, management assistance, and co-ordination, are not herein reported upon, but are listed at the end of the report.

RESOURCE CONSERVATION AND UTILIZATION BRANCH

CONSERVATION AND UTILIZATION COMMITTEE

Interdepartmental activities of the committee were expanded in scope and representation by the addition of five members from the Departments of Health, Highways and Transport, Industry and Tourism, Mines and Minerals, and Municipal Affairs, as authorized by O.C. 2135/69. The addition of these members and the continued participation of the total membership is instrumental in the development of an integrated natural resource policy for the government leading to optimum renewable resource allocation.

Numerous staff functions were performed to assist in co-ordinated studies and research projects for committee recommendations.

LAND ASSEMBLY AND FARM ADJUSTMENT AND CONSOLIDATION PROGRAM

Table I indicates land purchases for alternate land use and resource adjustment, from January 1, 1969 to January 1, 1970.

TABLE I

Purpose of Purchase	No. of Parcels	Cost
Farm and Woodlot Adjustment - - -	131	$496,161.75
Grazing Reserve Assembly - - - - -	42	93,231.00
Forestry Assembly - - - - - - -	16	13,543.75
Watershed Conservation - - - - -	17	35,864.00
Community Pasture Assembly - - - -	1	850.00
Recreation Assembly - - - - - -	9	19,075.00
Wildlife Conservation - - - - - -	4	4,012.50
Conservation Assembly - - -- - - -	143	287,557.00
		$950,295.00

Nine Farm Adjustment Committees were appointed by the Minister in the Peace River Block.

LAND IMPROVEMENT AND DEVELOPMENT PROGRAM

Table II indicates the progress to date.

TABLE II

No. of Applications Approved	Acreage	Amount of Loans Guaranteed
26	1500 acres clearing 1065 acres breaking	$42,000.00

This program is applicable in Census Division 14 only and is available on a selective basis as a part of the total rural development program. It is not intended for indiscriminate land clearing or breaking.

CANADA LAND INVENTORY PROGRAM

This is a federally financed, provincially operated program. The objective is to map in the settled areas, at 1" = 1 mile, land capability for agriculture, forestry, outdoor recreation and three kinds of wildlife. To date, the following maps are completed: Agriculture 25 of 38; Forestry 20 of 38; Recreation 27 of 38; Wildlife 51 of 114; and Present Use 38 of 38. No map sheet was completed for each capability. Eleven colored maps of smaller scale were published by Ottawa for distribution. Information from the maps, with other land data, was being computerized by the Canada Geographic Information System for storage and analysis service to governments. Copies of the maps were being used in administration, planning ,and research of renewable resources by eight municipal planning groups, three research offices, twelve government administrations, four educational institutions, and several private consultants.

AGRICULTURAL PRODUCTS MARKETING COUNCIL

A plan for an Alberta Cattle Commission was established under The Marketing of Agricultural Products Act. The purpose of the commission is to collect fees on cattle marketed in order to initiate, support or conduct programs for improving the economic well-being of the cattle industry by developing improved marketing methods, grading and quality standards, research and educational programs. This plan will not become operational until early 1970.

Other plans that had been established in 1968, but which did not begin to function until 1969, were the plans for an Alberta Egg and Fowl Marketing Board, and the Alberta Hog Producers' Marketing Board. The former issues marketing quotas and sets producer prices for the purpose of reducing price fluctuations, while the hog board operates as selling agency for the sale of all hogs for slaughter within Alberta.

A plan for consideration under the act was submitted late in 1969 by the Farmers' Union of Alberta for the establishment of a Forage Seeds Marketing Board. Details concerning such a board will be worked on early in 1970.

The Marketing Council gave guidance to persons and commodity groups pertaining to the use of the Marketing Act. Council was also instrumental in resolving some problems between boards, producers, and the trade.

Agricultural products currently regulated to varying degrees under the act are as follows:

1. Producer boards established for vegetables for processing, chicken broilers, turkeys (broiler and heavies), commercial eggs and fowl, and hogs for slaughter.
2. Commissions established for potatoes and cattle.

MUNICIPAL AGRICULTURAL PROGRAMS BRANCH

Agricultural Service Boards, which number 59, continue as effective instruments in provincial-municipal relationships in the field of agriculture.

The co-ordination of programs and processing of agreements was an important function of this branch. A provincial warble control program was introduced to which several boards subscribed during the year. Liaison with Agricultural Service Boards was actively pursued through board meetings, regional meetings and the provincial conference. Progress was made toward provision of inservice training for agricultural fieldmen. Programming at the municipal level is developing on a broader base by use of advisory committees and by wider use of regional resource personnel.

The activities of the Alberta Federal-Provincial Agricultural Manpower Committee centred mainly on the supply of seasonal labor for the sugar beet, vegetable and potato industries of southern Alberta. This consisted mainly of Indian and Metis workers. A total of 1,037 adult workers were recruited, transported and placed by the committee in 1969.

Housing for workers under committee auspices is provided by four modern community type hostels accommodating 215 workers and by housing on individual farms. Such housing is inspected and approved for suitability; in 1969 this comprised 327 houses on 274 farms.

Upon initiation by the Potato Growers Association, 27 young Japanese farm workers were recruited in Japan and placed in southern Alberta. The placement of 330 European agricultural trainees on Alberta farms for a six-month period also contributed to the farm labor force.

The training of agricultural workers is receiving increased emphasis by courses such as hog production and dairy production at Vermilion.

Two new Agricultural Societies, Bonnyville and Provost, received charters during the year. Westlock, Olds and Edmonton took advantage of loan guarantees in their building programs.

Regular fairs included 4 Class A, 8 class B, and 14 Class C. Agricultural and homemaking activities and exhibits at fairs, as well as supporting grants for such activities, are now under review and evaluation in light of present day technology and consumer interests.

IRRIGATION SECRETARIAT

As a result of the Irrigation Act, 1968, a considerable amount of time has been spent with the thirteen active irrigation districts, assisting them to conform to the requirements of the act. In this regard eleven regular monthly Irrigation Council meetings and two special meetings with the representatives of the irrigation districts have been held.

In view of the demands on the time of the Premier, the Hon. H. E. Strom of necessity tendered his resignation as a member of the Irrigation Council, following which the Lieutenant Governor in Council appointed J. F. Brewin, an active irrigation farmer of Purple Springs, as a replacement.

A major need of irrigation districts is the rehabilitation of their capital works. The Irrigation Act, 1968, provides that the board of directors of an irrigation district may enter into arrangements, agreements and accords with the Government of Canada ,the Government of Alberta or one or more local authorities for the sharing of costs for rehabilitating irrigation works. Thirteen irrigation districts have signed cost-sharing agreements for the 1969-70 fiscal year with the Government of Alberta for an aggregate sum of $678,639.15, 86% of which is provided by the Province.

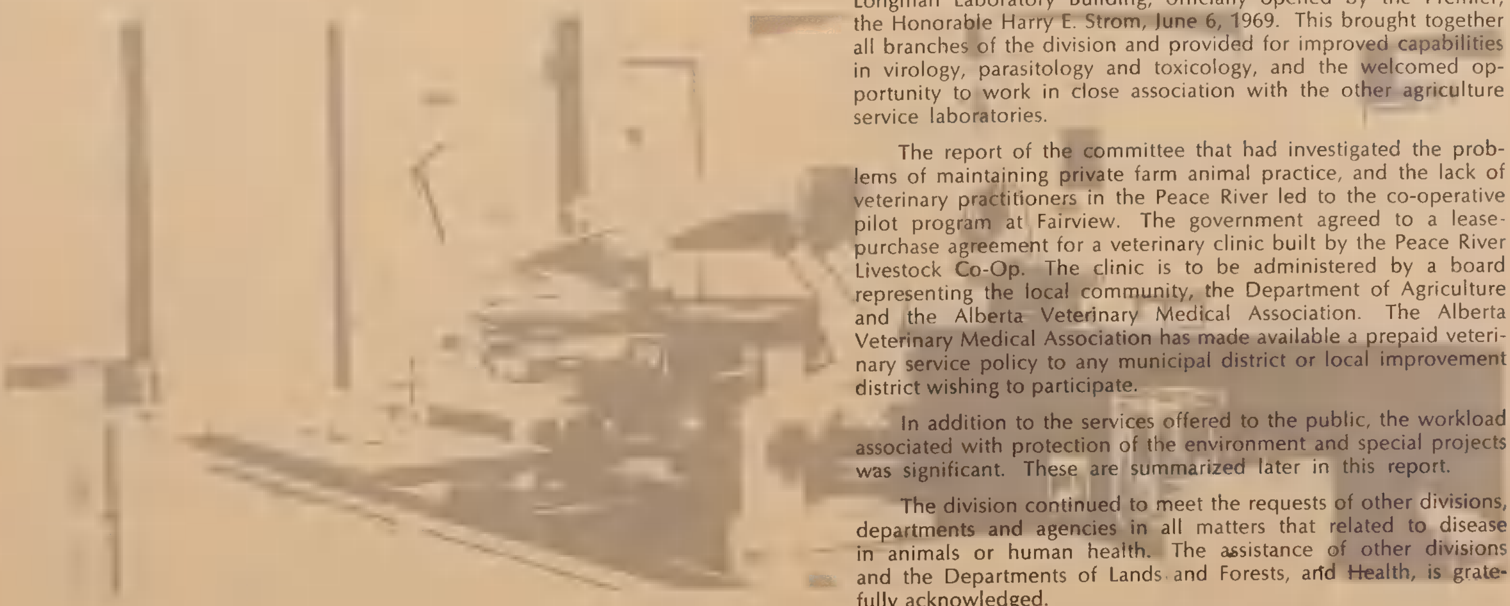
Further attention is being given to a careful analysis of the act, as well as to increasing and extending the cost sharing rehabilitation program.

SPECIAL DIVISIONAL ACTIVITIES

1. Program development with regard to marketing.
2. Internal management development activities, including the Management Development Committee, and the Monthly Reports Committee.
3. Clarification of internal lines of communications.
4. Development of the A.D.A. Research Committee.
5. Development of an Information Retrieval System.
6. Compilation of Departmental Plans.
7. Representation on interdepartmental and interdisciplinary committees such as A.A.R.T.
8. Director's responsibilities as Chairman of the Joint Specialist Group of the Human Resources Development Authority.

Report of the Veterinary Services Division

Dr. J. G. O'DONOGHUE, D.V.M., DIRECTOR



The highlight of the year was occupancy of space in the O. S. Longman Laboratory Building, officially opened by the Premier, the Honorable Harry E. Strom, June 6, 1969. This brought together all branches of the division and provided for improved capabilities in virology, parasitology and toxicology, and the welcomed opportunity to work in close association with the other agriculture service laboratories.

The report of the committee that had investigated the problems of maintaining private farm animal practice, and the lack of veterinary practitioners in the Peace River led to the co-operative pilot program at Fairview. The government agreed to a lease-purchase agreement for a veterinary clinic built by the Peace River Livestock Co-Op. The clinic is to be administered by a board representing the local community, the Department of Agriculture and the Alberta Veterinary Medical Association. The Alberta Veterinary Medical Association has made available a prepaid veterinary service policy to any municipal district or local improvement district wishing to participate.

In addition to the services offered to the public, the workload associated with protection of the environment and special projects was significant. These are summarized later in this report.

The division continued to meet the requests of other divisions, departments and agencies in all matters that related to disease in animals or human health. The assistance of other divisions and the Departments of Lands and Forests, and Health, is gratefully acknowledged.

FIELD SERVICES

Extension and field activities included administration of official legislative programs, such as communicable disease control, livestock inspection, herd health programs, and livestock medicine control. Specific disease outbreaks and pollution problems suspected of affecting livestock were investigated. Additional responsibilities included field study projects, lectures at universities and vocational colleges, and concern with the maintenance of large animal practice. Projects were undertaken in co-operation with other agencies, governments, and disciplines.

SUMMARY OF ACTIVITIES

Field Investigations

Cattle	47
Swine	20
Sheep	4
Horses	4
Poultry	5
Fur Animals	35
Others	110
TOTAL	**235**

Meetings

Brucellosis	2
Domestic Animals	24
Poultry	1
Professional	30
Others	26
Community Pastures	2
Locker Association	4
TOTAL	**89**

Inspections

Livestock Markets	160
Stockyards	221
Livestock Medicines	387
Slaughterhouses	116
Swine	49
Swine Herd Health	185
Pastures (days)	10
A.I.	3
Others	3
TOTAL	**1‘134**

Lectures

University	27
Vocational Colleges	19
N.A.I.T.	1
Others	14
TOTAL	**61**

COMMUNICABLE DISEASE CONTROL

Under the voluntary program, 101,487 heifer calves were vaccinated for Brucellosis, by 112 veterinarians, with the aid of 59 agricultural fieldmen.

Morbidity and mortality statistics were compiled from veterinary practitioner reports on calls to 5,669 premises.

As part of the community pasture program, 27 deaths or disease conditions in cattle and 14 in sheep on 9 pastures, were investigated.

Rabies was not reported. Anthrax occurred in the Foremost district in August. Western equine encephalomyelitis was not confirmed. Infectious Bovine rhinotracheitis, as a cause of both respiratory disease and abortion in cattle, was significant.

LIVESTOCK INSPECTION

Veterinary inspection was provided to 56 Class "D", 2 Class "E", and 3 Class "F" stockyards. A total of 1,185,677 animals were inspected at 3,153 sales, 17,293 being rejected as constituting a hazard to the potential buyer. Some supervision was maintained over 30 Class "C" and 189 Class "G" stockyards.

Under the community pasture program, 20,106 cattle, and 1,903 sheep were inspected on admission to 11 pastures. Rejections totalled 87 head.

SWINE HEALTH PROGRAMS

Summary of Activities

Total enrolment at January 1, 1969	46
Number of herd inspections	185
Necropsies performed at the laboratory	103
Necropsies performed by practitioners	6
Heads and lungs examined	677
Misc. specimens examined	41
Total blood samples drawn	98
Enrolment at December 31, 1969	46

Routine screening of all herds for swine influenza antibodies has been continued and at the request of the Animal Diseases Research Institute at Hull, Quebec, a special project was commenced in which a number of serum samples are being forwarded from herds that have consistently shown pneumonia-free lungs at post mortem. Assistance was also afforded to the British Columbia Department of Agriculture, which is in the process of setting up a swine herd health program for British Columbia's swine breeders.

Three herds on the program were selected as Alberta's contribution to a shipment of 150 Lacombe hogs drawn from herds across Canada to be exported to East Germany.

LIVESTOCK MEDICINE REGULATIONS

Licenses were issued during the year to 435 outlets, an increase of 22 from the previous year. Three hundred and fifty-two inspections were made of licensed outlets and 34 premises of new applicants. All reports received of infractions were investigated, and in all cases, a satisfactory conclusion was reached.

Thirty-three licenses to sell live-virus poultry vaccines were issued. Avian encephalomyelitis vaccine was approved for use in Alberta.

SLAUGHTERHOUSES AND HUMANE SLAUGHTER

Eighty-eight licenses were issued to businesses operating slaughterhouses already licensed as locker plants or specialized processing plants. Six were issued to businesses operating a slaughterhouse only, and three to educational institutions offering instruction in slaughtering procedures.

EMERGENCY PLANNING OFFICER

Two annexes of the Resources Book were updated, and a third was undergoing revision at the end of the year. A review of emergency slaughter facilities and capabilities was undertaken.

Sample plans were prepared for the Unit Municipal Agricultural Emergency Measures Committees. The plan is in trial use.

Five agricultural fieldmen were trained in emergency agricultural operation at the Alberta Civil Defense School. Eleven departmental personnel received training at Arnprior, Ontario, in agricultural emergency planning, and one in radio-isotope studies in food. Provincial agricultural personnel participated in Exercise Triad II in the northern zone headquarters, Camrose.

LABORATORY SERVICES

The primary responsibility of this branch was to provide a diagnostic service to the livestock industry. The laboratories at Edmonton and Lethbridge provided equipment and trained personnel not available in private clinics or practices. Identification of the cause is essential to treatment and control of disease.

Edmonton Laboratory	No. Specimens Examined	
	1968	1969
Animal	10,241	10,747
Poultry	7,021	7,724
Microbiology	4,673	4,791
Toxicology	15,500	13,410
Lethbridge Laboratory		
Animal	2,526	2,641
Poultry	1,249	1,199

Species Table, and Numbers of Each:

	Edmonton	Lethbridge
Cattle	3,255	1,572
Swine	3,426	335
Sheep	318	247
Horses	129	92
Dog	1,161	140
Cat	409	55
Fur	273	85
Wildlife	189	28
Chickens	5,150	1,284
Turkeys	1,942	213
Milk	3,766	466
Bloods — Avian	7,339	
— Animal	403	20
Others — Avian	633	39
— Animal	1,178	26
Total	29,571	4,602

MICROBIOLOGY

Bacteriological Examinations	Edmonton	Lethbridge
Animal	3,432	1,432
Poultry	3,008	353
Feti	420	34
Special Projects	5,073	518
Virology	507	
Immunology	13,588	84
Biologicals		
(Autogenous Bacterins/Vaccines)	42	28

Three hundred serum and tissue specimens were shipped to other laboratories for additional processing.

HISTOPATHOLOGY

Tissue Specimens Prepared	Edmonton	Lethbridge
Domestic Animals	9,891	2,134
Poultry	4,657	459
Fur-bearing & Miscellaneous	979	3
Total	15,527	2,596

PARASITOLOGY

The improved facilities at Edmonton for parasitology examinations resulted in a sharp rise in the numbers examined. Eight hundred and seventy-nine specimens were examined at Edmonton and 280 at Lethbridge.

TOXICOLOGY

The instrument inventory and general facilities of the laboratory have been greatly expanded on relocation to the O. S. Longman Laboratory Building, which facilitated the introduction of more advanced toxicological methods.

The services provided include comprehensive chemical analyses for human and veterinary toxicology, water supplies, forensic purposes and quality control for the Alberta Liquor Control Board, and other departments of government.

The laboratory processed a total of 13,410 specimens as categorized below:

Tissues and body fluids (human)	1,399
Tissues and body fluids (animal)	820
Feed samples	254
Water samples	7,144
Liquors and beer	2,144
Forensic samples	600

The forensic work required 74 court appearances.

SUMMARY OF SPECIAL INVESTIGATIONS

1. A study of petroleum and natural gas industry effects on animals.
2. Investigations into the cause of "trembles" in baby pigs.
3. A survey of incidence of serological reactions to swine influenza in Alberta pigs.
4. A serological survey of selected herds for enzootic pneumonia.
5. Bacillary hemoglobinuria in central Alberta.
6. Chicken broiler breeder mortality.
7. A paralytic condition in a flock of 16,000, 12 week-old turkeys.
8. A province-wide survey of mercury residues in pheasants, Hungarian partridges, and sharptail grouse.
9. Tissue residue studies after experimental feeding of treated seed grain to pheasants.
10. Investigations into the cause of cirrhotic livers in broiler chickens.
11. A survey for Salmonella in dogs from city and town animal pounds.
12. Investigation of techniques for Salmonella isolation.
13. Survey of normal fetal weights and preparation of histological sections for reference purposes.
14. Preparation and testing of infectious bronchial rhinotracheitis and bovine virus diarrhea conjugates.
15. Investigation of bovine abortion problems possibly due to a Bedsonia agent.
16. Mycoplasmal arthritis in swine.
17. Bovine polioencephalomalacia
18. Abortions in cattle due to infectious bronchial rhinotracheitis virus.
19. Locoweed poisoning of horses.
20. Copper poisoning in sheep.
21. A mortality survey of feedlot lambs.

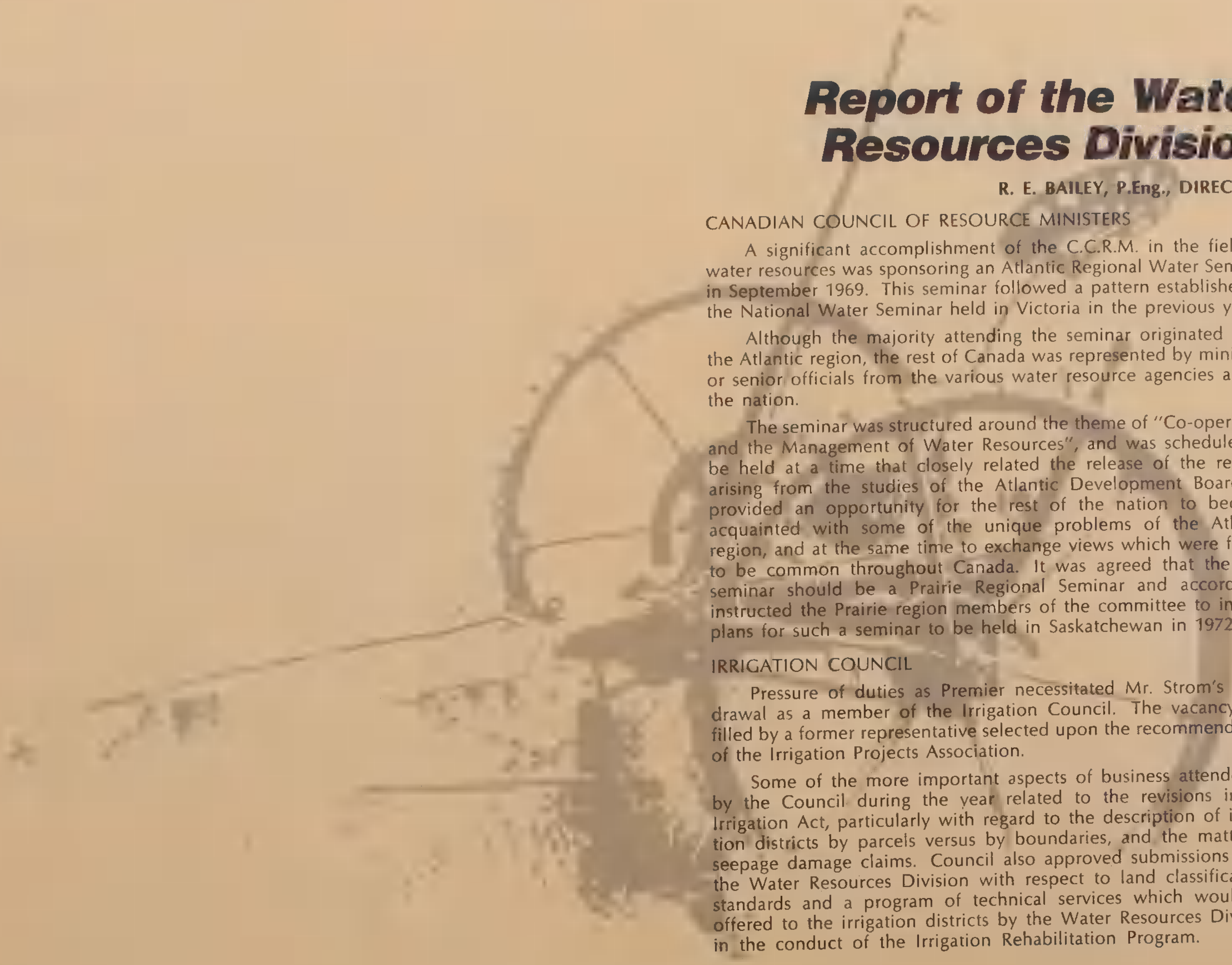
FUR FARMS BRANCH

The number of fur-bearing animals declared on 417 licensed fur farms this season amounted to a total of 252,762 animals. At the current pelt prices, this represented a capital investment in livestock of over three and one-half million dollars.

Mink represented 94% of the animals maintained on Alberta fur farms. Of the mink declared on 155 farms, 86,471 were standards and 153,272 were mutations. There were 170,540 pelts sold for 2.5 million dollars. Mink prices, on a market slightly improved from a year ago, were still low. Approximately, 53% of the mink raised in Alberta are produced on the shores of Lac La Biche and Lesser Slave Lake, and have done much to make these areas productive communities. Mink ranchers chose these two areas because of the large volume of rough fish available as mink feed.

Information and material was given out on mink, chinchilla, rabbits, cavies, and nutria. The 46th Annual American Rabbit Breeders' Association Convention and Show was held in Calgary in September, the first time for this function to be held in Canada. Further information is available through the Fur Farm Branch, now located in the O. S. Longman Laboratory Building.

Chinchilla Licenses Issued	Year	Mink Licenses Issued	Mink Pelts Produced	Mink Pelt Value
245	1967-68	184	201,444	$2,765,762
206	1966-67	224	190,691	$2,686,591
181	1965-66	249	190,471	$3,721,385



Report of the Water Resources Division

R. E. BAILEY, P.Eng., DIRECTOR

CANADIAN COUNCIL OF RESOURCE MINISTERS

A significant accomplishment of the C.C.R.M. in the field of water resources was sponsoring an Atlantic Regional Water Seminar in September 1969. This seminar followed a pattern established at the National Water Seminar held in Victoria in the previous year.

Although the majority attending the seminar originated from the Atlantic region, the rest of Canada was represented by ministers or senior officials from the various water resource agencies across the nation.

The seminar was structured around the theme of "Co-operation and the Management of Water Resources", and was scheduled to be held at a time that closely related the release of the reports arising from the studies of the Atlantic Development Board. It provided an opportunity for the rest of the nation to become acquainted with some of the unique problems of the Atlantic region, and at the same time to exchange views which were found to be common throughout Canada. It was agreed that the next seminar should be a Prairie Regional Seminar and accordingly instructed the Prairie region members of the committee to initiate plans for such a seminar to be held in Saskatchewan in 1972.

IRRIGATION COUNCIL

Pressure of duties as Premier necessitated Mr. Strom's withdrawal as a member of the Irrigation Council. The vacancy was filled by a former representative selected upon the recommendation of the Irrigation Projects Association.

Some of the more important aspects of business attended to by the Council during the year related to the revisions in the Irrigation Act, particularly with regard to the description of irrigation districts by parcels versus by boundaries, and the matter of seepage damage claims. Council also approved submissions from the Water Resources Division with respect to land classifications standards and a program of technical services which would be offered to the irrigation districts by the Water Resources Division in the conduct of the Irrigation Rehabilitation Program.

To assist in fulfilling the responsibilities of the Water Resources Division to the Irrigation Council, an Irrigation Rehabilitation Technical Steering Committee was appointed within Water Resources Division under the chairmanship of the Regional Director, Mr. N. S. Thomson. This committee will assist irrigation districts in scheduling rehabilitation program activities and the provisions of technical services, and make recommendations to Council through the Water Resource Division representatives on Council.

Representation to the federal government regarding its participation in the rehabilitation program continued, but to date no firm commitment has been forthcoming, and consequently the program is limited to that portion which involves joint participation between the provincial government and the individual irrigation districts.

During the course of the year, all irrigation districts entered into the rehabilitation program agreements with the provincial government.

SASKATCHEWAN-NELSON BASIN STUDY

For background pertaining to the Saskatchewan-Nelson Basin Study, reference should be made to previous annual reports beginning with 1963-68. Under the terms of reference establishing the Study Board, which has headquarters in Regina, Saskatchewan, it reports to the Committee of Ministers on annual progress and expenditures.

In May of 1969, the Committee of Ministers met in Edmonton, at which time the board reported to the committee regarding the progress of the study and proposals for its future conduct. This was the first meeting of the Ministers Committee since 1967, and due to various changes in portfolios since that time, the Honorable Mr. Strom from Alberta is the only remaining original member of the Minister's Committee. Mr. Strom still occupies the position of chairman of the committee.

The study is progressing generally on schedule with the exception that some revision was found necessary in the target for the completion of the final report. The schedule of field investigation remains essentially unchanged.

PRAIRIE PROVINCES WATER BOARD

Perhaps one of the most historical events ever to have taken place in Canada with respect to water resource management occurred on October 30, 1969, with the successful conclusion and signing of the Interprovincial Water Apportionment Agreement.

This agreement, made jointly among the three Prairie provinces and the federal government, was signed at ceremonies in Regina by the Honorable J. J. Greene, Federal Minister of Energy, Mines and Resources; The Honorable H. A. Ruste, Minister in Charge of Water Resources for Alberta; the Honorable L. S. Evans, Manitoba Minister of Mines and Natural Resources; the Honorable A. R. Guy, Minister in Charge of the Saskatchewan Water Resources Commission.

The purpose of the agreement is to apportion equitably among the three provinces the water of interprovincial streams flowing east from Alberta into Saskatchewan and from Saskatchewan into Manitoba. With this apportionment now agreed upon, each of the Prairie provinces is in a position to know what portion of the total available supplies it is entitled to develop and utilize.

Activity towards the design of a comprehensive hydrometeorological network has continued. A consulting firm, hired by the Federal Inland Waters Branch, and meeting periodically with the Board's data network subcommittee, will produce a report in early 1970 on a hydrometric network for the Prairie provinces. Initial contacts with the Meteorological Branch with a view to obtaining their co-operation in a meteorological network study have been slower but encouraging.

Included in the terms of the general agreement relative to the Interprovincial Water Apportionment Agreement, the three Prairie provinces and the Government of Canada also agreed to reconstitute the Prairie Provinces Water Board Agreement which has been in existence since 1948. Since inception, the Prairie Provinces Water Board has acted as an advisory board which made recommendations to the respective governments as to the amount of water that should be allocated from interprovincial streams for specific projects. The responsibilities of the new board are now changed to the administration of the apportionment agreements and the co-ordination of technical programs for the gathering and analysis of streamflow data. The agreement also provides for the participating governments to refer any matters concerning planning and management of interprovincial waters to the Board for study and recommendations.

Under these new terms of reference the members appointed to the Board are A. T. Davidson, Assistant Deputy Minister (Water), Federal Department of Energy, Mines and Resources (chairman); J. G. Watson, Chief Engineer, Prairie Farm Rehabilitation Administration; R. E. Bailey, Director of Water Resources Division, Alberta Department of Agriculture; Grant C. Mitchell, Vice-Chairman and Executive Director, Saskatchewan Water Resources Commission; and T. E. Weber, Director, Water Control and Conservation Branch, Manitoba Department of Mines and Natural Resources.

CANADA WATER ACT

After several years of contemplation and consideration, the federal government developed and proposed a Canada Water Act, known as Bill C-144.

Prior to being drafted in the form of a bill, joint federal-provincial meetings were held to discuss the content and application of the proposed act, and this matter is still under review by the provinces preparatory to making submissions to the appropriate federal government agency during debate on the bill.

Alberta endorses the content of the bill in principle. Some of the mechanics for carrying out the intent of the bill are, however, being questioned, particularly the provision which, under certain circumstances, allows the federal government to exercise very broad unilateral powers in those areas of resource management which the provinces feel rightfully comes under provincial jurisdiction.

The bill provides for three main areas of joint federal-provincial participation. These are:

1. Consultative committees for the purpose of establishing federal-provincial liaison on matters relative to water resource development and pollution control.
2. Water resource development which is provided for under joint federal-provincial co-operation when such is in the national interest.
3. Water quality management, also provided for under joint federal-provincial participation where such is considered to be of urgent national concern.

HYDRO-ELECTRIC DEVELOPMENT

BRAZEAU SITE NORTH SASKATCHEWAN RIVER

The Brazeau Dam spillway structure was completed in the fall of 1969. On October 8, a full scale test of the structure was run and flows up to 10,000 c.f.s. were passed down the spillway.

The spillway will be available for runoff in the spring of 1970 and it will be possible to increase the reservoir full supply level from 3164 feet to 3170 feet.

BIGHORN SITE

The Bighorn interim license was approved by Order-in-Council No. 38/69 and was dated January 7, 1969. This was followed by a full scale hearing before the legislature on April 1, 2, 3, 8 and 9, 1969. The act validating the agreement between the Province and Calgary Power Ltd., now known as Chapter 11, 1969 was assented to on April 30, 1969. This act came into force on the day it was assented to and coming into force, the agreement outlined in Order-in-Council No. 38/69 shall be deemed to have been in force at all times on and after January 7, 1969.

The location of this development is on the North Saskatchewan River, 80 miles west of Rocky Mountain House. The dam will be 1,400 feet long, 300 feet high, and will contain 3,800,000 cubic yards of material. The reservoir will be 20 miles long, with a total area of 13,700 acres. The area flooded, in addition to the present flood plain, is approximately 9,000 acres. The total live storage of the project will be 1,165,000 acre-feet of storage. The full supply level will be 4335 geodetic datum with a drawdown of 120 feet, more or less. Two turbines, each capable of producing 54,000 kilowatts, will be installed. The total cost of the project is expected to be between $30 to $35 million. Construction commenced in 1969 and is expected to be completed by the fall of 1972.

The Bighorn reservoir will provide an estimated average winter flow of upwards of 2,000 c.f.s. as compared with the present unregulated 500 to 600 c.f.s Such a reservoir, in addition to its other benefits, will reduce the occurrence of high flood checks downstream.

ATHABASCA AND PEACE RIVERS

No new work was done on the Athabasca River but some preliminary examinations were given to the Slave River, which is formed by the Athabasca and Peace Rivers.

EXTERNAL ADMINISTRATION BRANCH

WATER RIGHTS LEGISLATION AND ADMINISTRATION PROGRAM

Administration of statutes and related fiscal activities are the primary objectives of the Water Rights Legislation and Administration Program. Currently the Water Resources Division is responsible for the administration of The Water Resources Act, The Ground Water Control Act and The Drainage Districts Act.

In addition to usual activities, emphasis was placed on stream lining and updating water right procedures; cancellation or licensing of outstanding applications and interim licenses and on amendments to The Water Resources Act.

WATER RIGHTS

A total of 233 applications for water rights were received and recorded in 1969. A total of 273 interim licenses and 206 final licenses for all purposes were issued during the year, 33 projects were transferred and 219 were cancelled.

The microfilming of 14,519 water right plans completed the back log of plans, bringing the total to 40,996 filmed plans in aperture cards.

Irrigation Water Agreements

During the year a total of 48 water agreements were received from the Bow River Development (Federal Block) for approval, registration and filing.

Irrigation Right-of-Way

Right-of-way plans for the irrigation districts and for other purposes are processed and approved before forwarding to the Land Titles Office for registration. During the year the following right-of-way plans were registered:

St. Mary River Irrigation District	12
Bow River Irrigation District	3
Lethbridge Northern Irrigation District	1
Other Purposes	4

Property Control

Acquisition of right-of-way for the Pembina River Dam was continued as considerably more land is required due to the increased full supply level. Other specific activities include land acquisition for the West Prairie River diversion and claims investigation of Modeste Creek and Vermillion River. Considerable work was done on field estimates of cost of right-of-way for the Horseguard Reservoir, Rocky Mountain House Dam Site "A", Athabasca-Oldman Dam and Ardley Dam sites, also canal right-of-way for water diversion from the Pembina River to the North Saskatchewan to the Red Deer.

Groundwater Administration

All drillers were informed that after the first of September, the operator's permit of any driller found violating any provision of the act or regulations would be subject to cancellation and the driller liable to prosecution under the general penalty clause of the act.

In addition to two water supply schools, over 600 visits and inspections were made relative to well complaints, flowing holes and low enforcement.

A water well driller's directory was published, listing all licensed water well drillers, addresses, number and type of machines and those who belong to the Alberta Water Well Drilling Association. Nearly 300 copies were distributed to the drillers and other interested agencies and individuals.

The following is a summary of information relative to the water well drilling industry, showing a comparison for the years 1965 to 1969.

	1965	1966	1967	1968	1969
Number of licensed water well drillers	233	212	210	217	234
—Full Time	94	95	91	97	99
—Part time	74	78	59	62	69
—Occasional	57	36	54	57	32
—Out of business or dormant	8	3	6	1	34
Number of drilling rigs	282	250	239	253	267
—Rotary	123	120	111	115	111
—Cable Tool	87	82	83	85	89
—Jetting	30	23	22	31	34
—Boring	42	25	23	22	32
No. of drilling reports received	2,020	1,850	1,970	1,900	2,377

Emergency Water Supply Operations

The following is a summary of the activities under the emergency water supply policy using equipment supplied by the division:

Town	Gallons of Water Supplied
Waskatenau	2,000,000
Fort Chipewyan	2,000,000
Faust	200,000

DESIGN AND CONSTRUCTION BRANCH

ALBERTA WATER CONTROL PROGRAM

The program is used to enhance the beneficial and multipurpose use of water through water control projects. This is done by assisting local authorities in the investigation, design and construction of flood control, erosion control, irrigation and water development projects. The program provides the engineering, agricultural, technical, and in most cases, financial assistance to carry out the objectives of this program.

During 1969, construction was carried out on 44 projects throughout the province at a combined cost of approximately $1,228,000. Grants given to various local authorities amount to nearly $920,000 (75% of total).

LAKE RESOURCE MANAGEMENT

The objectives of the program are: (1) conservation and development of major lakes for the multipurpose use of water and (2) to provide the general public and government agencies with information on geodetic lake levels, hydrographic and lake bed contour plans.

One lake control structure was constructed on Sturgeon Lake near Valleyview. The main emphasis, however, was on data collection and analysis for problem areas such as Gull Lake and Cooking Lake.

OPERATION AND MAINTENANCE

During 1969, operation and maintenance has been carried out by the Design and Construction Branch and the Internal Administration Branch.

Funding for operation and maintenance is totally provincial, there being no financial assistance under the Alberta Water Control Assistance Plan.

The 1969-70 program included: (1) continued operation and maintenance of the Aetna Leavitt and Mountain View canal and reservoir; (2) completion of the reconstruction of the Little Bow Canal; (3) completion of the Tail Water structure at Heart River Dam No. 1; (4) reconstruction of the outlet channel below Lake Winagami Spillway; and (5) rip-rap protection on Wilson bridge at Chain Lakes site.

HYDROLOGY BRANCH

The basic function of the Hydrology Branch, i.e., the provision of information on hydrological factors (streamflow, precipitation, stream erosion, etc.) remained unchanged this year. Major advances in services performed came in the fields of flow forecasting, protection against river bank erosion, and detailed flood plain studies. In addition, increased sophistication in hydrological analysis resulted from computer manipulation of hydrometric data and from experimental results obtained in the watershed research program.

Flow forecasting became a full time activity this year. Initial emphasis was placed on adequate training of staff. Studies have progressed through a preliminary consideration of the adequacy of incoming hydrological data to detailed analysis of floods along the Pembina and McLeod Rivers. Sufficient information was available to provide public forecasting for the Pembina River last summer.

A sharply increasing volume of requests for aid in erosion control has shifted the emphasis of the river engineering section from data collection to design and construction of the river bank protection devices at numerous locations in the province. Similarly the pressures for urban and recreational development are reflected in increased demands for the delineation of "safe areas" along river flood plains.

Advances being made in both the computer manipulation of hydrological data and experimental knowledge gained from watershed research will be felt both in the quality of service offered by this branch and in publications planned for the new year.

DEVELOPMENT PLANNING BRANCH

PRIME

Athabasca River Basin Project

Investigations continued on means of diverting flows from the Athabasca River to the North Saskatchewan. On two proposals, the Pembina River damsite and the diversion canal, Pembina River to Isle Lake, investigations were completed, while investigations on the remaining proposals are scheduled for completion during 1970.

North Saskatchewan River Basin Project

Proposals to divert water from the North Saskatchewan River to the Red Deer River continued under investigation. As well, the inventory stage of the Sturgeon River Basin Development Study is nearing completion. Continued co-operation has been received from participating agencies of the Sturgeon River Basin Development Committee.

A new study of the Battle River, designed to determine water supply and requirement patterns, was initiated during 1969. The study is scheduled for completion early in 1970.

Red Deer Development Project

Investigations were undertaken to study alternative means of supplying water to a large block of irrigable land in the Cessford area. Another study within the Red Deer River basin, started and completed during 1969, was the assessment of various alternatives to stabilize water levels on Gull Lake. Recommendations resulting from the study are now under consideration.

South Saskatchewan River Basin Study

This study was officially launched by the signing of an agreement between the provincial government and the University of Alberta. The agreement provides for the Department of Agricultural Economics, University of Alberta, to undertake economic research related to water resource development in the South Saskatchewan River Basin.

Saskatchewan-Nelson Basin Study

Data collection and field investigation progressed as scheduled. An additional study was also initiated, investigating alternative routes for diverting flows from the Red Deer River to the Bow River.

SOILS, GEOLOGY AND GROUNDWATER BRANCH

SOIL DRAINAGE AND CLASSIFICATION

Investigational and design work for the alleviation of canal seepage and salted land problems continued at a high level in the irrigation areas. This work contributes to the overall irrigation rehabilitation program. Dryland salt and waterlogging problems are receiving greater attention, particularly in Region 1 and the Red Deer area.

Investigation of soils for irrigation potential continued in all regions but Peace River. Some of the reports, such as the South Saskatchewan River Basin, North Saskatchewan River Basin and the Red Deer River Basin are of a preliminary nature for planning purposes, while other reports delineate irrigable acreage for operation purposes.

GROUNDWATER EXPLORATION, INVENTORY AND DEVELOPMENT

Preglacial channel investigations at Edson and Wardlow have indicated safe yields in excess of 100 g.p.m. of potable water. Large quantities of water from deep gravels can also be obtained in an area east of Manning but the water is of marginal quality for human consumption.

A number of projects were undertaken for or with other government agencies: Mud buttes, contorted bedrock, Research Council of Alberta and Geological Survey of Canada; supplementary test drilling, Research Council of Alberta; Spring Creek Basin, I.H.D., Hydrology Branch; Fort MacKay community water supply, H.R.D.A., and Department of Health and Municipal Affairs.

One hundred and ninety-eight farms were serviced under the Individual Water Development Program with eighty-nine successful sites located.

Preliminary groundwater inventory reports were completed on the South Saskatchewan Basin, the Red Deer River Development Study area and the North Saskatchewan Basin.

IRRIGATION STUDIES

Groundwater monitoring has been greatly reduced to eliminate measurements outside other than in a normal grid pattern. The shallow subdrainage project south of Taber (joint project with the Canada Department of Agriculture) indicates that lined mole drains are far superior in performance to unlined moles. The Magrath drainage plot yielded a good forage crop to 1969 with minimum irrigation.

Instrumentation of the Irrigation Study Basin is virtually complete; a hydrologic budget was prepared for the 1969 irrigation season. Interpretation of the piezometer readings and application of a computer program have made possible the interpretation of the groundwater flow system.

AGROHYDROLOGY BRANCH

The branch completed a preliminary report on meterological and consumption use data in the PRIME — South Saskatchewan River Basin. This data was used to determine anticipated total water needs for agricultural crops in the basin. The data is based on climatic data — precipitation, maximum-minimum temperatures, evaporation and daylight hours for reporting stations over the southern part of the province.

In an effort to determine the effects of soil types and soil moisture conditions on stream flows a study was initiated on a watershed in the southwest corner of the province. The study involves instrumentation to measure inflow (precipitation) to, and outflow (stream flow) from, along with the soil moisture storage and uses on the watershed. It is anticipated that values can be given to soil types, soil moisture conditions and moisture uses by various crops to determine their effects on discharge amounts for measured precipitation amounts. Knowledge of these factors can give better flood control and reservoir management.

Studies on irrigation surface system designs were made on plots at Bow Island. Data will be evaluated and design criteria recommendations made for future irrigation development.

To provide some economic indication of benefits or non-benefits of irrigation in areas of the province other than the southern part, studies or irrigated crops were conducted in the Edmonton and Grande Prairie districts. The work in the Edmonton area is a continuation of past years but that at Grande Prairie is new this year.

The branch contributed to the International Hydrological Decade study at Lethbridge, co-operated in soil moisture and consumptive use data for watershed studies at Spring Creek and Olds, and contributed to the Irrigation Gauge Program.

LAND DEVELOPMENT BRANCH

FARM IRRIGATION AND SURFACE DRAINAGE

The primary objective is to supply technical service and information that will aid people to make beneficial use of water in the production of crops and livestock.

The following table summarizes the work performed:

Application received .	741	Surface Drainage Surveys (miles)	95
Inspection Reports ..	279	Sprinkler Designs	59
Land Levelling Surveys (acres)	14,157	Agricultural Reports ..	81

Land classification reports were submitted for the Sturgeon and South Saskatchewan River Basins. Preliminary studies were also carried out on the Battle River, McLennan-Girouxville area, Ribstone Creek, Spotted Lake and the Pembina River cutoff.

LAND DEVELOPMENT PLANNING

The Department of Lands and Forests created a Land Use Assignment Committee in August of 1969. Its objective is to relate the natural resource capabilities of public lands in Alberta to the present and future needs of society. The disciplines of land, forestry, fish and wildlife, recreation and water are represented. To date the Water Resoures Division has been represented at 21 meetings to deal with proposed zone changes between green, white, yellow and brown, and to recommend on regional zoning plans.

LAND LEVELLING TRUST ACCOUNT

Total revenue for the year amounted to $66,471.80. The charges (less depreciation) were $50,074.84, leaving a surplus of $16,396.96 to cover depreciation and interest. The balance owing to the Provincial Treasurer on the original advance is $25,468.56.

LAND MANAGER

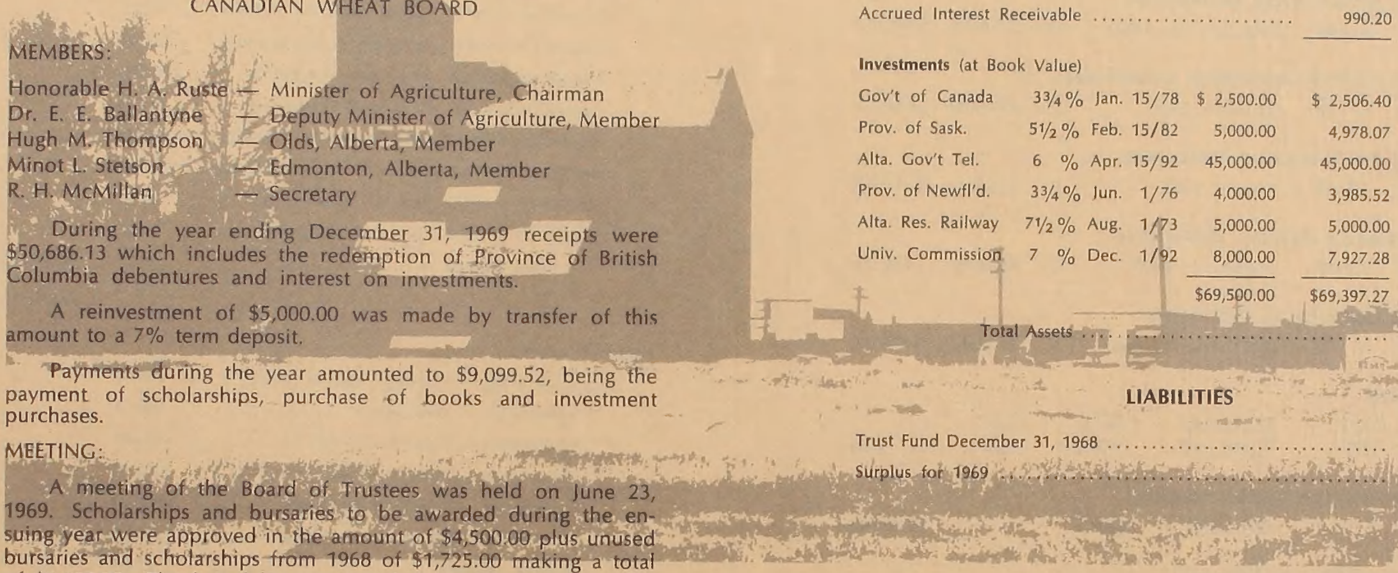
A new act passed in May, 1969, combined the two prior acts leaving Land Manager activities a single entity with jurisdiction over former crown lands and contracts in the St. Mary and Milk River Irrigation District and the Bow River Irrigation District.

Collections compared favorably with past years but only slightly reduced total arrears balance and the number of contracts in arrears. Water right cotracts are reducing with more rapidity due to no new signings and maturity of contracts. Paid up land agreements are increasing.

Most land purchasing and improvement was for consolidation and development of present units. No new settlers were established.

Report of the Wheat Board Monies Trust

REPORT OF THE BOARD OF TRUSTEES OF THE SURPLUS WHEAT BOARD MONEY RECEIVED BY THE GOVERNMENT OF THE PROVINCE OF ALBERTA FROM 1916-19 CANADIAN WHEAT BOARD



MEMBERS:

Honorable H. A. Ruste — Minister of Agriculture, Chairman
Dr. E. E. Ballantyne — Deputy Minister of Agriculture, Member
Hugh M. Thompson — Olds, Alberta, Member
Minot L. Stetson — Edmonton, Alberta, Member
R. H. McMillan — Secretary

During the year ending December 31, 1969 receipts were $50,686.13 which includes the redemption of Province of British Columbia debentures and interest on investments.

A reinvestment of $5,000.00 was made by transfer of this amount to a 7% term deposit.

Payments during the year amounted to $9,099.52, being the payment of scholarships, purchase of books and investment purchases.

MEETING:

A meeting of the Board of Trustees was held on June 23, 1969. Scholarships and bursaries to be awarded during the ensuing year were approved in the amount of $4,500.00 plus unused bursaries and scholarships from 1968 of $1,725.00 making a total of $6,225.00. The board has continued the policy of conserving the principal in the Trust Fund, making all payments from income received on interest on investments.

TREASURY DEPARTMENT WHEAT BOARD MONIES FUND

BALANCE SHEET AS AT DECEMBER 31, 1969

ASSETS

Current					
Bank Balance				$47,856.93	
Term Deposit Receipt				5,000.00	
Accrued Interest Receivable				990.20	$53,847.13
Investments (at Book Value)					
Gov't of Canada	3¾ %	Jan. 15/78	$ 2,500.00	$ 2,506.40	
Prov. of Sask.	5½ %	Feb. 15/82	5,000.00	4,978.07	
Alta. Gov't Tel.	6 %	Apr. 15/92	45,000.00	45,000.00	
Prov. of Newfl'd.	3¾ %	Jun. 1/76	4,000.00	3,985.52	
Alta. Res. Railway	7½ %	Aug. 1/73	5,000.00	5,000.00	
Univ. Commission	7 %	Dec. 1/92	8,000.00	7,927.28	
			$69,500.00	$69,397.27	$69,397.27
Total Assets					$123,244.40

LIABILITIES

Trust Fund December 31, 1968	$121,631.78
Surplus for 1969	1,612.62
	$123,244.40

TREASURY DEPARTMENT WHEAT BOARD MONIES TRUST FUND

ACCRUED INTEREST RECEIVABLE AS AT DECEMBER 31, 1969

Government of Canada Debentures					
$ 2,500.00	3¾ %	January 15, 1978	5½	Months	$ 42.96
Province of Saskatchewan Debentures					
$ 5,000.00	5½ %	February 15, 1982	4½	Months	$103.12
Alberta Government Telephones Debentures					
$45.000.00	6 %	April 15, 1992	2½	Months	$562.50
Province of Newfoundland Debentures					
$ 4,000.00	3¾ %	June 1, 1967	1	Month	$ 12.50
Alberta Resources Railway Debentures					
$ 5.000.00	7½ %	August 1, 1973	5	Months	$156.25
Universities Commission Debentures					
$ 8,000.00	7 %	December 1, 1992	1	Month	$ 46.67

Bank Interest				
November 1969	$3,051.93	@2%	5.02	
December 1969	$2,481.93	@2%	4.22	$ 9.24
Accrued Earnings on Deposit Receipt				
	58 Days	@7%		$ 55.62
Add: Accumulation of Discount				
Accrued on Province of Saskatchewan			.78	
Accrued on Province of Newfoundland			.81	
Accrued on Universities Commission			.30	$ 1.89
Less: Amortization of Premium				
Accrued on Government of Canada			.55	$ .55
Accrued Earnings to December 31, 1969				$990.20

TREASURY DEPARTMENT WHEAT BOARD MONIES TRUST FUND

STATEMENT OF RECEIPTS AND PAYMENTS
FOR THE YEAR ENDED DECEMBER 31, 1969

Bank Balance January 1, 1969		$ 6,270.32
Add: Interest on $ 2,500. Canada	$ 93.74	
Interest on $ 5,000. Alberta Resources Railway	375.00	
Interest on $ 5,000. Province of Saskatchewan	275.00	
Interest on $45,000. Alta. Govt. Telephones	2,700.00	
Interest on $ 8,000. Universities Commission	560.00	
Interest on $45,000. Prov. of British Columbia	1,350.00	
Red 'ption of $45.000. Prov. of British Columbia	45,000.00	
Interest on $ 4,000. Prov. of Newfoundland	150.00	
Interest on $ 5,000. Term Deposit Receipt	84.38	
Bank Balance	98.01	$50,686.13
		$56,956.45
Deduct: Payments		
Scholarships — Camrose Lutheran College	$ 100.00	
Scholarships — Olds School	900.00	
Scholarships — Vermilion School	900.00	
Scholarships — Fairview School	600.00	
Scholarships — University of Alberta	1,000.00	
Scholarships — University of Calgary	300.00	
Meeting Expenses	20.00	
Purchase of Books	279.52	
Purchase of $5,000.00 Deposit Receipt	5,000.00	$ 9,099.52
Bank Balance December 31, 1969		$47,856.93